

S  
628.53  
H26  
1979

PLEASE RETURN

STATE DOCUMENTS COLLECTION

OCT 29 1979

MONTANA STATE LIBRARY  
930 E Lyndale Ave.  
Helena, Montana 59601

BACKGROUND AIR QUALITY STUDIES  
OF THE POPLAR RIVER AREA OF  
NORTHEASTERN MONTANA  
1978

by:

James W. Gelhaus  
Michael G. Machler  
Sheldon Z. Schwartz  
Michael D. Roach

AIR QUALITY BUREAU  
ENVIRONMENTAL SCIENCES DIVISION  
MONTANA DEPARTMENT OF HEALTH  
AND ENVIRONMENTAL SCIENCES  
HELENA, MONTANA

August, 1979



JAN 23 '80

Montana State Library



3 0864 1006 7605 8

BACKGROUND AIR QUALITY STUDIES  
OF THE POPLAR RIVER AREA OF  
NORTHEASTERN MONTANA  
1978

by:

James W. Gelhaus  
Michael G. Machler  
Sheldon Z. Schwartz  
Michael D. Roach

AIR QUALITY BUREAU  
ENVIRONMENTAL SCIENCES DIVISION  
MONTANA DEPARTMENT OF HEALTH  
AND ENVIRONMENTAL SCIENCES  
HELENA, MONTANA

August, 1979





Digitized by the Internet Archive  
in 2015

<https://archive.org/details/backgroundairqua1979gelh>



## AUTHORS

James W. Gelhaus - Air Pollution Meteorologist with the Air Quality Bureau and Project Coordinator. B.S. in Mathematics and M.S. in Meteorology, South Dakota School of Mines and Technology.

Michael G. Machler - Consulting Meteorologist. B.S. in Meteorology, University of Utah.

Sheldon Z. Schwartz - Consulting Meteorologist. B.S. in Meteorology, University of Utah.

Michael D. Roach - Chief of the Air Quality Bureau. B.S. and M.S. in Engineering, Oregon State University.







# TABLE OF CONTENTS

	<u>Page</u>
EXECUTIVE SUMMARY . . . . .	i
LIST OF TABLES AND FIGURES . . . . .	ii - vi
I. INTRODUCTION . . . . .	1
II. AMBIENT AIR QUALITY . . . . .	5
A. SUSPENDED PARTICULATES . . . . .	5
B. SULFUR DIOXIDE AND NITROGEN DIOXIDE . . . . .	6
C. SUSPENDED SULFATES AND NITRATES . . . . .	7
III. METEOROLOGY . . . . .	23
A. SURFACE METEOROLOGY . . . . .	23
B. UPPER AIR METEOROLOGY . . . . .	24
IV. VISIBILITY . . . . .	51
A. TURBIDITY . . . . .	56
B. DIFFUSE RADIATION . . . . .	57
V. SUMMARY . . . . .	86
REFERENCES . . . . .	87
APPENDIX A - CALCULATION OF SOLAR EPHEMERIDES FOR SOLAR RADIATION STUDY . . . . .	88
B - DATA SUMMARIES . . . . .	93







## EXECUTIVE SUMMARY

In late 1979 or early 1980 the first 300 megawatt unit of the Poplar River coal-fired power plants is scheduled to start operation. The plants are being built near Coronach, Saskatchewan about four miles from the U.S.-Canada border. Concern over possible damage to crops and health of the people of northeastern Montana caused the Air Quality Bureau of the Montana Department of Health and Environmental Sciences to initiate background air quality studies near the town of Scobey, Montana. The studies, initiated in March, 1977, were funded primarily through a special appropriation of the U.S. Congress.

This report is third in a series summarizing the air quality, meteorology, and visibility data collected in the study area from March, 1977 through March, 1979.

## LIST OF TABLES

	<u>Page</u>
Table 1 - List of Instruments Used in the Poplar River Study . . . .	9
Table 2 - Poplar River Area Suspended Particulate Concentration Statistical Analysis 1977-1978 . . . .	10
Table 3 - Poplar River Area Suspended Particulate Concentration Frequency Distribution 1977-1978 . . . .	11
Table 4 - Monthly Total Precipitation, Scobey, Montana . . . .	15
Table 5 - Poplar River Area Particle Size Data . . . . .	17
Table 6 - Poplar River Area Sulfur Dioxide Concentrations 1977-1978 . . . . .	19
Table 7 - Poplar River Area Nitrogen Dioxide Concentrations 1977-1978 . . . . .	19
Table 8 - Poplar River Area Suspended Sulfate Data . . . . .	20
Table 9 - Poplar River Area Sulfate Sizing Data . . . . .	20
Table 10 - Poplar River Area Suspended Nitrate Data . . . . .	22
Table 11 - Poplar River Area Nitrate Sizing Data . . . . .	22
Table 12 - Holzworth Lapse Rate Categories (Modified) . . . . .	38
Table 13 - Scobey, Montana Means and Extremes . . . . .	39
Table 14 - Average Monthly Mixing Heights . . . . .	40
Table 15 - Inversion Frequency Table - Morning Soundings . . . .	41
Table 16 - Inversion Frequency Table - Afternoon Soundings . . .	42
Table 17 - Most Common First Inversion Base Height and Thickness by Time and Month, from Acoustic Radar . . . . .	43



	<u>Page</u>
Table 18 - Most Common Second Inversion Base Height and Thickness by Time and Month, from Acoustic Radar . . . . .	44
Table 19 - Percent Frequency of Occurrence of Periods with Inversion(s) Present . . . . .	45
Table 20 -Percent Frequency of Occurrence of Stability Classifications 0000-2400 MST . . . . .	46
Table 21 - Percent Frequency of Occurrence of Stability Classifications 0000-0600 MST . . . . .	47
Table 22 - Percent Frequency of Occurrence of Stability Classifications 0600-1200 MST . . . . .	48
Table 23 -Percent Frequency of Occurrence of Stability Classifications 1200-1800 MST . . . . .	49
Table 24 - Percent Frequency of Occurrence of Stability Classifications 1800-2400 MST . . . . .	50
Table 25 - Poplar River Atmospheric Turbidity Data (Volz Base e) Daily Trends . . . . .	59
Table 26 - Poplar River Atmospheric Turbidity Data (Volz Base e) Daily Trends . . . . .	60
Table 27 - Poplar River Atmospheric Turbidity Data (Volz Base e) Daily Trends . . . . .	61
Table 28 - Poplar River Area Summary of Solar Radiation - 1977 - Wavelength 300 to 2800 nm . . . . .	71
Table 29 - Poplar River Area Summary of Solar Radiation - 1978 - Wavelength 300 to 2800 nm . . . . .	72
Table 30 - Poplar River Area Summary of Solar Radiation - 1979 - Wavelength 300 to 2800 nm . . . . .	73
Table 31 - Poplar River Area Summary of Solar Radiation - 1978 Wavelength 300 to 700 nm . . . . .	74
Table 32 - Poplar River Area Summary of Solar Radiation - 1979 - Wavelength 300 to 700 nm . . . . .	75

Table 33 - Poplar River Area Summary of Solar Radiation 1978 - Wavelength 700 to 2800 nm . . . . .	76
Table 34 - Poplar River Area Summary of Solar Radiation 1979 - Wavelength 700 to 2800 nm . . . . .	77



## LIST OF FIGURES

	<u>Page</u>
Figure 1 - Poplar River Area Map . . . . .	2
Figure 2 - Poplar River Area Monthly Average Particulate Data Scobey Border Station	12
Figure 3 - Poplar River Area Monthly Average Particulate Data Scobey Richardson Site	13
Figure 4 - Poplar River Area Monthly Average Particulate Data Scobey Engberg Site	14
Figure 5 - Poplar River Area Monthly Precipitation . . . . .	16
Figure 6 - Poplar River Area Particle Size Data. . . . .	18
Scobey Border Station	
Figure 7 - Poplar River Area Suspended Sulfate Data. . . . .	21
Scobey Border Site	
Figure 8 - Poplar River Area Atmospheric Turbidity Trend . . .	62
Monthly 1200 MST Average	
Figure 9 - Poplar River Area Atmospheric Turbidity Trend . . .	63
Monthly 1200 MST Average	
Figure 10 - Poplar River Area Monthly Average Turbidity . . .	64
Versus Time of Day, April 1978	
Figure 11 - Poplar River Area Monthly Average Turbidity . . .	65
Versus Time of Day, May 1978	
Figure 12 - Poplar River Area Monthly Average Turbidity . . .	66
Versus Time of Day, June 1978	
Figure 13 - Poplar River Area Monthly Average Turbidity . . .	67
Versus Time of Day, July 1978	
Figure 14 - Poplar River Area Monthly Average Turbidity . . .	68
Versus Time of Day, August 1978	
Figure 15 - Poplar River Area Monthly Average Turbidity . . .	69
Versus Time of Day, September 1978	

Figure 16 - Poplar River Area Monthly Average Turbidity. . . .	70
Versus Time of Day, October 1978	
Figure 17 - Poplar River Area Monthly Average Extinction . . .	78
Coefficient Versus Time of Day, August 1978	
Figure 18 - Poplar River Area Monthly Average Extinction . . .	79
Coefficient Versus Time of Day, September 1978	
Figure 19 - Poplar River Area Monthly Average Extinction . . .	80
Coefficient Versus Time of Day, October 1978	
Figure 20 - Poplar River Area Monthly Average Extinction . . .	81
Coefficient Versus Time of Day, November 1978	
Figure 21 - Poplar River Area Monthly Average Extinction . . .	82
Coefficient Versus Time of Day, December 1978	
Figure 22 - Poplar River Area Monthly Average Extinction . . .	83
Coefficient Versus Time of Day, January 1979	
Figure 23 - Poplar River Area Monthly Average Extinction . . .	84
Coefficient Versus Time of Day, February 1979	
Figure 24 - Poplar River Area Monthly Average Extinction . . .	85
Coefficient Versus Time of Day, March 1979	

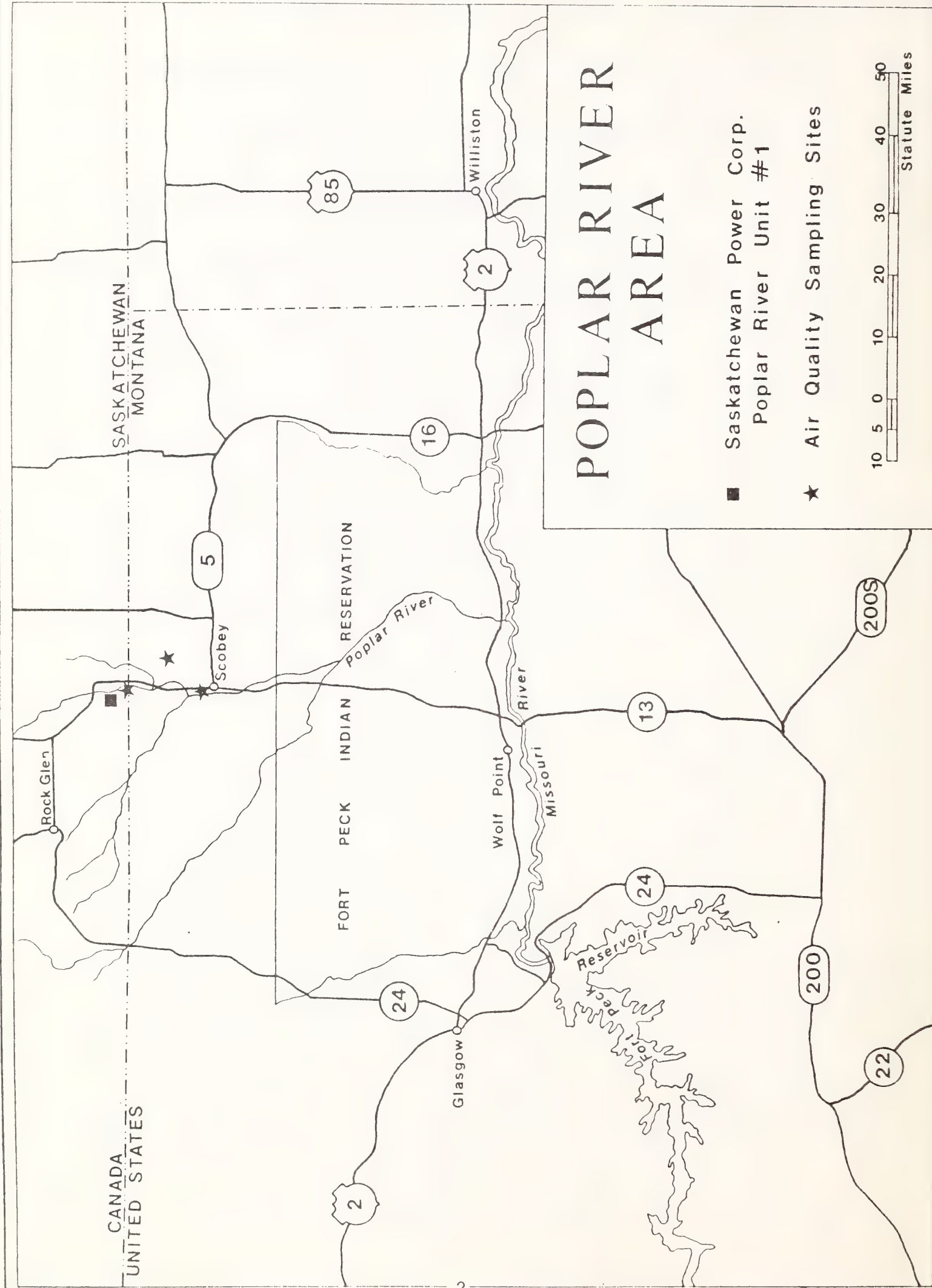


## I. INTRODUCTION

The Poplar River area of northeastern Montana has been the subject of detailed air quality studies since March, 1977. The studies are being conducted to establish a background air quality and visibility and to measure the surface and upper air meteorology to allow prediction of the ambient air pollution levels that will result from the construction and operation of the Poplar River power plants. The power plants are being constructed about five miles north of the U.S. - Canada border near Coronach, Saskatchewan (Figure 1). The first 300 megawatt unit is expected to be ready for testing in December 1979 and to be in full operation by April 1980. Announcement of the decision whether to construct a second 300 megawatt unit is expected before autumn 1979.

This report investigates the air quality studies of the first two years. The studies have been made possible through a special appropriation of the U.S. Congress. This report is the third in a series concerning the Poplar River air quality. The first report (Gelhaus, 1978) summarized the first year of air quality data collection. The second report (Gelhaus, ed., 1979a) discussed the various power plant effects on the area air quality, health, and vegetation. A final report summarizing all background air quality studies up to the point of the power plant testing will be published in early 1980.

The various instruments used in the study and the analysis procedures used are summarized in the first year report (Gelhaus, 1978). However, several additional instruments were added during the second year of data collection and these will be discussed here. Table 1 lists all the instruments used on the study to date. A description of the sampling sites is also given in the





first year report (photographs of each site are given in the appendix of this report). During the second year of study the following additional instruments were added to the study: (1) an acoustic radar, (2) a second diffuse radiation system, (3) an integrating nephelometer, (4) a dichotomous particulate sampler, (5) a five channel sun photometer, and (6) a second surface meteorological system.

The acoustic radar or monostatic acoustic sounder was used to continuously measure inversion height, duration, and thickness. It was also used to calculate atmospheric stability, using a method that relied on cloud cover, wind speeds, and solar radiation. The analysis procedures for the radar are discussed more fully in a report recently published by the Air Quality Bureau (Gelhaus, 1979b).

The second diffuse radiation system added was for the 0.3 to 0.7 micron wavelength which is the wavelength band in which absorption of solar radiation by water vapor has the least effect. Using the two systems together a better measure was made of the amount of solar radiation scatter due to aerosols.

The integrating nephelometer added was used to provide a continuous measure of the scattering coefficient of the air at the Scobey Border Station. This instrument was installed late in the study and the data will not be discussed in this report.

The dichotomous sampler installed during 1978 was used to measure the amount of suspended particulate or dust in the two size ranges of less than 2.5 microns and 2.5 to 15 microns, with the smaller size range in the respirable particulate category.

The five channel sun photometer added was used to measure turbidity or light scatter for five wavelengths. Use of the various wavelengths made

available an additional measure of the scattering and absorption of the direct solar beam due by aerosols or gasses.

The last instrument added was a second surface meteorological system. The older system was moved to the site near Scobey while the new system, which included wind speed, wind direction, temperature, dewpoint, and barometric pressure was installed at the Scobey Border Station site.

## II. AMBIENT AIR QUALITY

### A. Suspended Particulates

During 1977 and 1978, three high volume particulate samplers were run in the Poplar River area. The three samplers (see Figure 1 and the photographs in the appendix) were run once every six days.

Tables 2 and 3 summarize the total suspended particulate data from the three sites for the two year period. Table 2 gives the means and standard deviations along with the highest and second highest readings. The highest single reading was 129 micrograms per cubic meter ( $\text{ug}/\text{m}^3$ ) recorded at the Richardson site while the highest arithmetic average was recorded at the Engberg site ( $27.6 \text{ ug}/\text{m}^3$ ). No readings or annual averages approached or exceeded the federal or Montana ambient air quality standards.

Figures 2 through 4 display the trend in monthly averages of total suspended particulates. The Border Station trend shows a high peak in April 1977 with a decrease in concentrations until spring 1978, when another increase occurs until the summer of 1978. Comparing this with Table 4 and figure 5, showing the monthly precipitation levels for the Scobey area, a fairly good correlation can be seen during 1977 but not in 1978.

Both the Richardson and Engberg sites show the same basic trend in particulate levels as the Border Station.

During 1978 the particulate sampling program was expanded to include particle sizing instrumentation. A dichotomous sampler was installed in August 1978 to measure the amount of suspended particulate less than 2.5 microns and from 2.5 to 15 microns. Because of differences in instrumentation sampling techniques, the dichotomous samples cannot be compared directly with the high



volume samples. However, the dichotomous sampler gives a good measure of the fine particulates in the Poplar River area.

Table 5 summarizes the dichotomous data over the six-month sampling period. The data shows that on the average about 40 percent of the particulates less than 15 microns are in the smaller size range. Figure 6 displays the trend of the different size ranges over the sampling period. The data were collected over too short a period to show any definite seasonal pattern. However, the data shows a general decrease in concentrations from late summer to early winter with an increase again during mid-winter. This trend does not follow any clear pattern when compared to the precipitation for these months (Table 4). Collection of the particle sizing data is continuing and additional analyses should provide a better description of the patterns.

#### B. Sulfur Dioxide and Nitrogen Dioxide Data

Collection continued during 1978 on the sulfur dioxide and nitrogen dioxide levels. A bubbler sampler running on a 24-hour basis every sixth day was used to measure the concentrations. Refrigeration precautions were adhered to during all phases of the sample collection, transportation, and analysis. Tables 6 and 7 summarize the levels measured during 1977 and 1978 for sulfur dioxide and nitrogen dioxide, respectively. The sulfur dioxide levels during the two year period were all below the detection limit of the analysis method (i.e. less than 0.01 parts per million). Very low concentrations of nitrogen dioxide were also measured. The maximum 24-hour concentration measured was 0.01 parts per million. The annual average concentration was below the detection limit of the analysis method (i.e. 0.005 parts per million). In 1979 a continuous sulfur dioxide analyzer will replace the bubbler system previously used. The new analyzer will allow detection of short duration

sulfur dioxide concentrations from the power plant emissions.

### C. Suspended Sulfates and Nitrates

During 1978 analyses were started on the suspended particulates for sulfates and nitrates. These analyses were initiated to establish a baseline of the sulfates and nitrates prior to operation of the power plant. Sulfates and nitrates will be formed from the sulfur and nitrogen containing emissions from the power plant. Therefore it is important to know the normal levels of these compounds prior to the power plant startup. Nitrates and sulfates have been shown to affect visibility and human health.

Sulfate and nitrate analyses were performed on the high volume and dichotomous air samples. The results of the sulfate analyses are summarized in Tables 8 and 9. The average sulfate concentration from the high volume sample is approximately 10 to 15% of the total suspended particulate. The average sulfate values ranged from 2.5 micrograms per cubic meter ( $\text{ug}/\text{m}^3$ ) at the Border Station to 3.9  $\text{ug}/\text{m}^3$  at the Richardson Site. The dichotomous air samples show somewhat higher levels of sulfate concentrations. The total sample (particulates less than 15 microns) sulfate concentrations averaged approximately 7  $\text{ug}/\text{m}^3$ . The smaller particulates on the average comprise approximately 33 percent of the total sulfate concentration. Figure 7 displays the monthly trend of the sulfates from the dichotomous air samples. The time period is too short to show any detailed pattern. However, the data collected to date show a gradual increase in sulfates from autumn to winter. The average winter levels are about twice that of the autumn levels.

Tables 10 and 11 summarize the suspended nitrate data from the high volume and dichotomous air samples, respectively. The levels of nitrates from both methods are approximately one-half of the previously discussed

sulfate levels. The average nitrate levels from the high volume air samples ranged from 0.7 at the Border Station to 1.1 ug/m<sup>3</sup> at both the Engberg and the Richardson sites. The maximum 24-hour level was 3.8 ug/m<sup>3</sup> at the Richardson site. The dichotomous air samples show levels of nitrates about twice that of the high volume air samples. The fine particulates (less than 2.5 microns) averaged about 20 percent of the total sample. Laboratory analyses of blank dichotomous filters for nitrates have shown a very high and variable concentration. The high levels of nitrates do not occur in the blank high volume filters. The dichotomous filters being used are primarily teflon with a polyolefin ring around the edge for support. Because of these high levels of nitrate present in the background of the filters, the dichotomous nitrate results should be reviewed with caution.



TABLE 1

List of Instruments Used in the Poplar River Study

Air Quality

High volume air samplers (3)

Dichotomous particle sizing instrument

Sulfur Dioxide and Nitrogen Dioxide gaseous bubbler sampler

Meteorology

Wind speed and direction anemometer (2)

Temperature and dewpoint sensor

Barometric pressure sensor

Monostatic acoustic sounder

Mini-temperature sondes

Pilot balloons

Hygrothermograph

Visibility

Pyranometer (2 - 300-2800 micron; 300-700 micron)

Pyrheliometer (2 - 300-2800 micron; 300-700 micron)

Sun photometer (2 - 5 channel and 2 channel)

Integrating Nephelometer

TABLE 2  
POPLAR RIVER AREA SUSPENDED PARTICULATE CONCENTRATION  
STATISTICAL ANALYSIS 1977-1978

Site	Highest Readings					Arith.			Geo.	
	First	Second	Third	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.	Std. Dev.
Border Station	107	84	83	21.9	19.6	15.5	2.4	15.5	2.4	2.4
Richardson	129	100	95	24.3	21.9	17.7	2.2	17.7	2.2	2.2
Engberg	109	100	88	27.6	22.6	20.0	2.2	20.0	2.2	2.2

Values in micrograms per cubic meter

TABLE 3

POPLAR RIVER AREA SUSPENDED PARTICULATE CONCENTRATION  
FREQUENCY DISTRIBUTION 1977-1978

Values in micrograms per cubic meter

Site	Number of Observations	Minimum Observations	Percentiles									Maximum Observations	
			10%	30%	50%	70%	90%	95%	96%	97%	98%		99%
Border Station	103	1	5	10	17	24	42	65	76	80	83	84	107
Richardson	95	3	6	11	19	26	47	68	80	95	100	129	129
Engberg	103	3	7	13	21	30	59	82	83	87	88	100	109



Figure 2

Poplar River Area Monthly Average Particulate Data  
Scobey Border Station

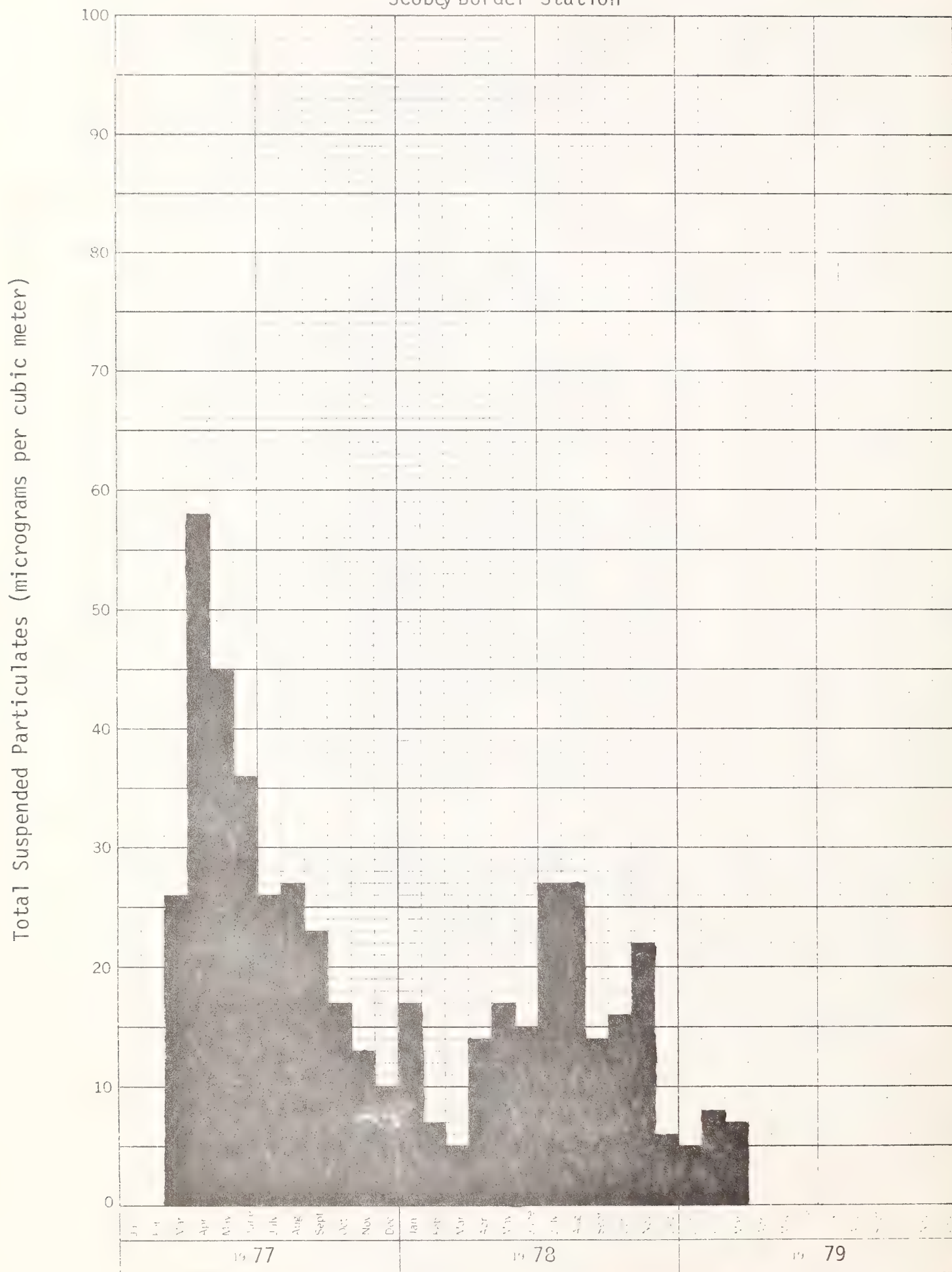


Figure 3  
 Poplar River Area Monthly Average Particulate Data  
 Scobey Richardson Site

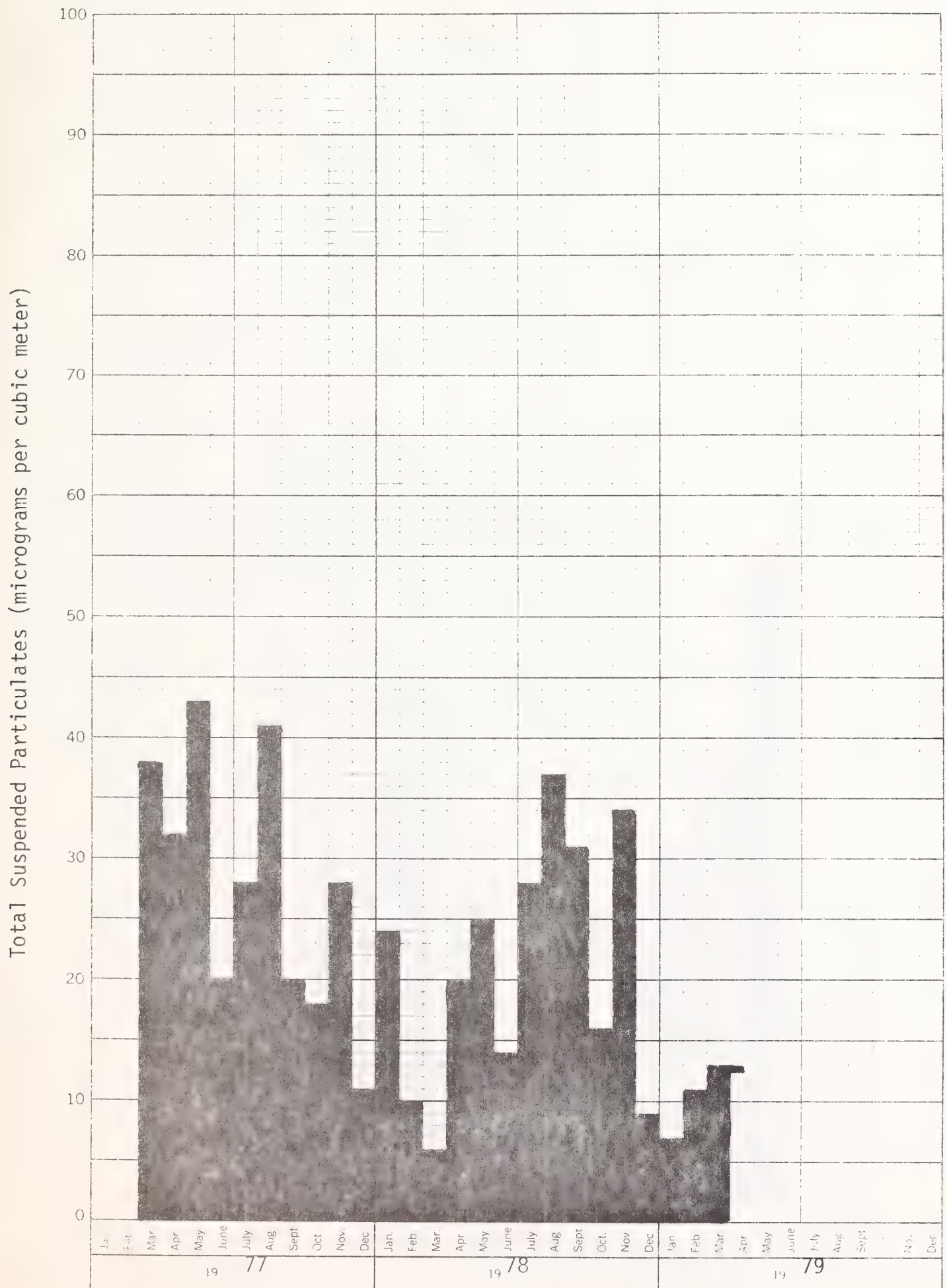


Figure 4  
 Poplar River Area Monthly Average Particulate Data  
 Scobey Engberg Site

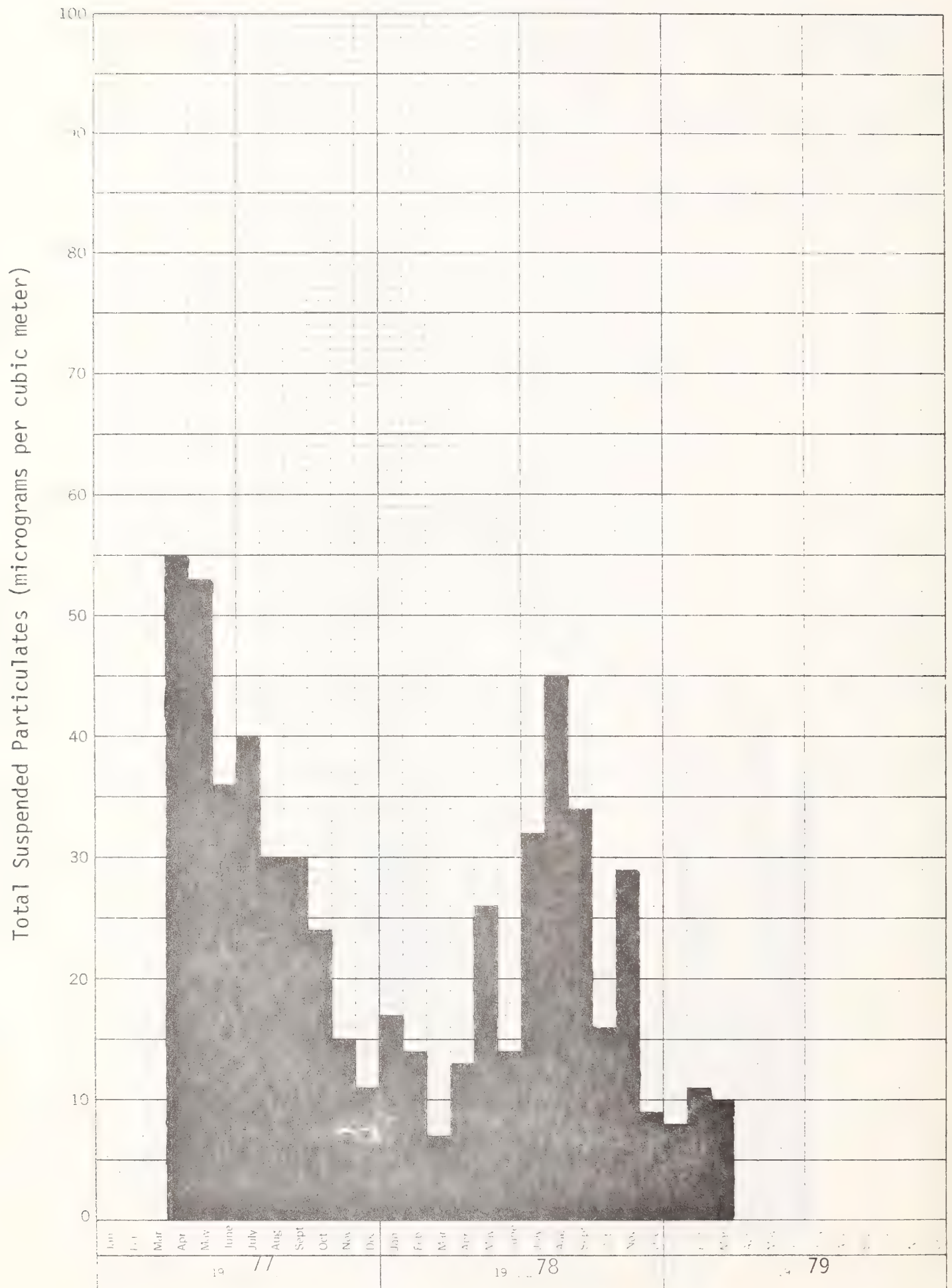




TABLE 4  
Monthly Total Precipitation  
Scobey, Montana

Month	Total (inches)	Departure from Normal (inches)
January, 1977	0.72	0.14
February	0.22	-0.28
March	0.12	-0.48
April	0.36	-0.63
May	1.54	-0.13
June	2.06	-0.98
July	1.35	-0.37
August	1.83	0.97
September	2.68	1.46
October	0.05	-0.57
November	1.08	0.66
December	1.56	1.06
January, 1978	0.26	-0.32
February	0.09	-0.41
March	0.44	-0.16
April	0.48	-0.51
May	4.44	2.77
June	3.83	0.79
July	2.55	0.83
August	0.11	-1.65
September	4.10	2.88
October	0.00	-0.62
November	1.44	1.02
December	0.56	0.06
January, 1979	0.68	0.10
February	1.35	0.85
March	0.38	-0.22

Figure 5

# Poplar River Area Monthly Precipitation Scobey, Montana

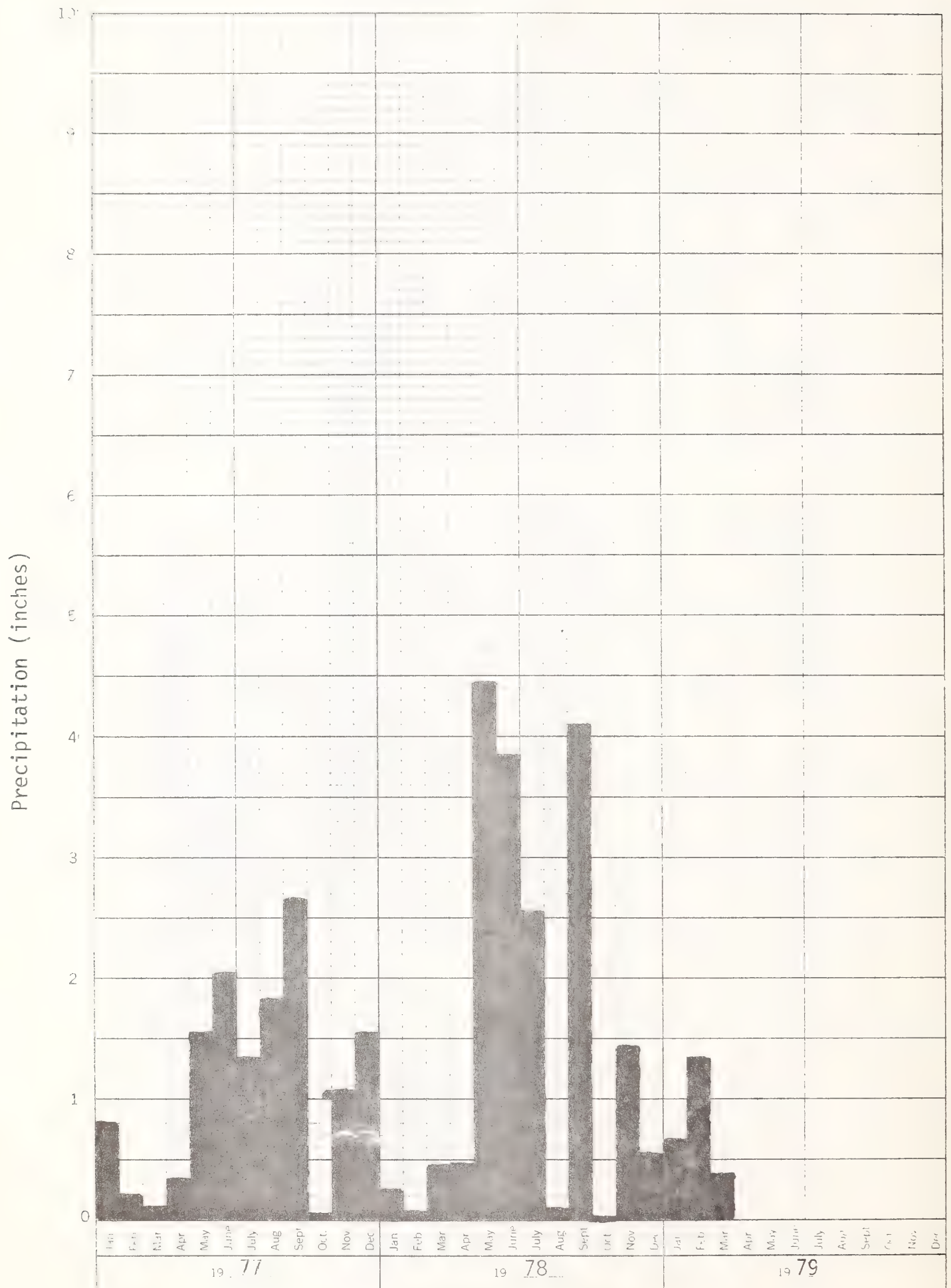


TABLE 5

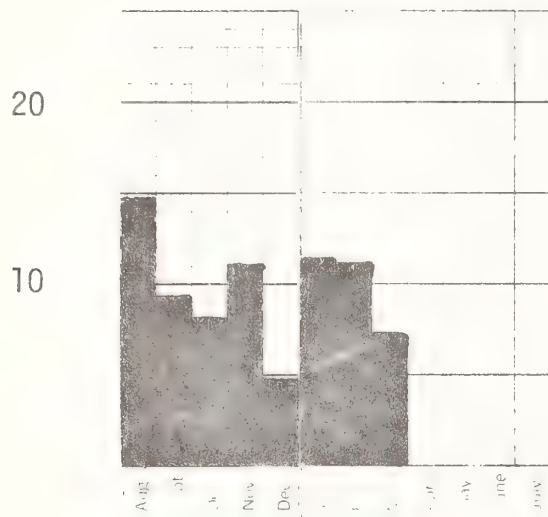
POPLAR RIVER AREA PARTICLE SIZE DATA  
August 24, 1978 - March 10, 1979  
BORDER STATION

Values in micrograms per cubic meter

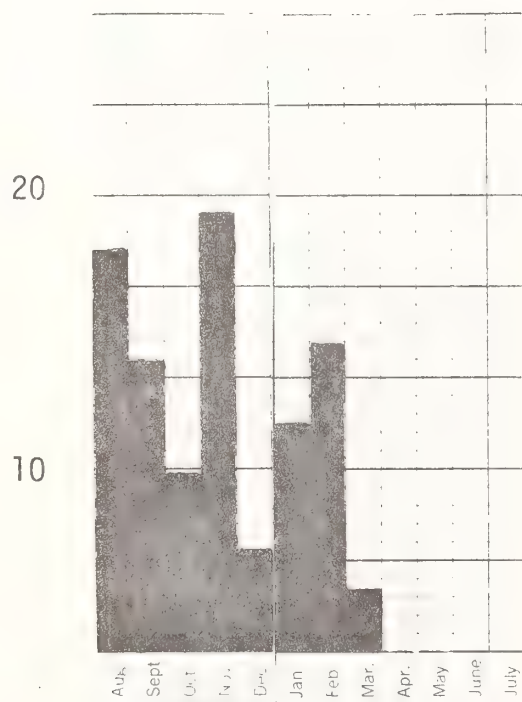
	Particulates <2.5 microns	Particulates 2.5 to 15 microns	Particulates <15 microns
Arith. Mean	9.7	14.1	23.8
Max. Reading	20.8	74.9	95.8



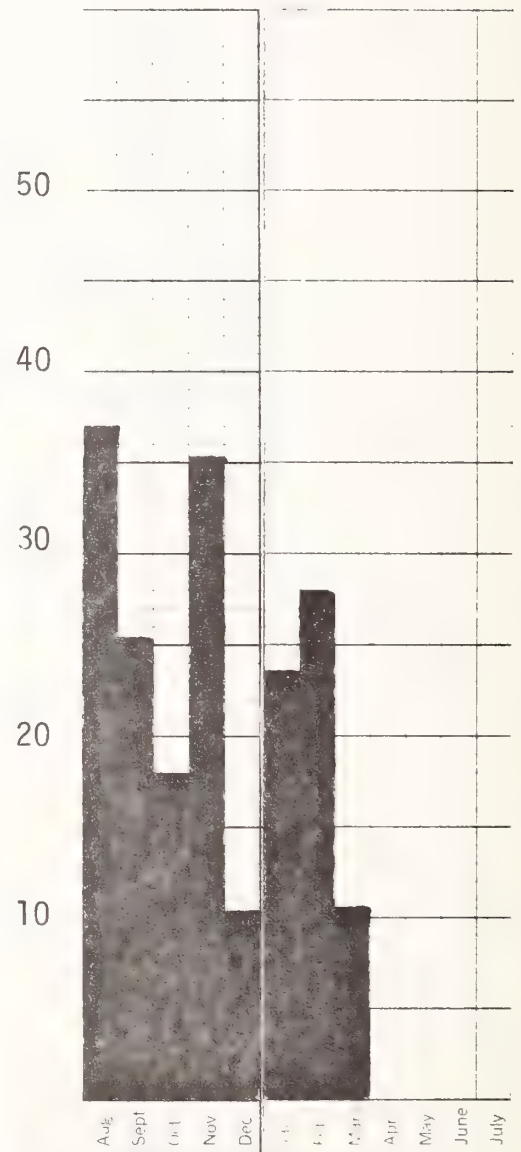
Figure 6  
 Poplar River Area Particle Size Data  
 Scobey Border Station



Particles less than  
 2.5 microns  
 1978-1979



Particles from 2.5 to  
 15 microns  
 1978 - 1979



Particles less than  
 15 microns  
 1978 - 1979

TABLE 6  
POPLAR RIVER AREA SULFUR DIOXIDE CONCENTRATIONS  
1977-1978

Values in parts per million (ppm)

Site	Maximum Reading*	Arithmetic Mean*
Border Station	< 0.01	< 0.01

\* Note - Minimum detectable level is 0.01 ppm.

TABLE 7  
POPLAR RIVER AREA NITROGEN DIOXIDE CONCENTRATIONS  
1977-1978

Values in parts per million (ppm)

Site	Maximum Reading*	Arithmetic Mean*
Border Station	0.01	< 0.005

\* Note - Minimum detectable level is 0.005.

TABLE 8

POPLAR RIVER AREA SUSPENDED SULFATE DATA\*  
September 1978 - March 1979

Values in micrograms per cubic meter

	Border Station	Richardson	Engberg
Arith. Mean	2.5	3.9	3.6
Max. Reading	6.0	6.8	7.8

\* Measured by a high volume sampler.

TABLE 9

POPLAR RIVER AREA SULFATE SIZING DATA\*  
December 1978 - March 1979  
BORDER STATION

Values in micrograms per cubic meter

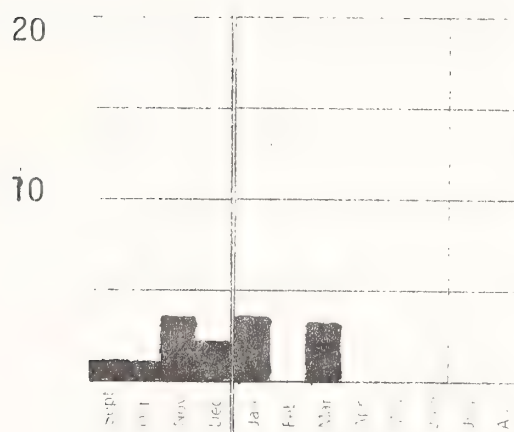
	Particles <2.5 microns	Particles 2.5 to 15 microns	Particles <15 microns
Arith. Mean	2.37	4.79	7.16
Max. Reading	5.23	9.67	12.74

\* Measured by a dichotomous sampler.

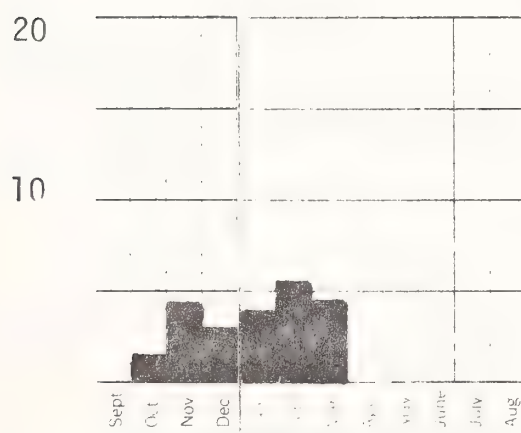


Figure 7

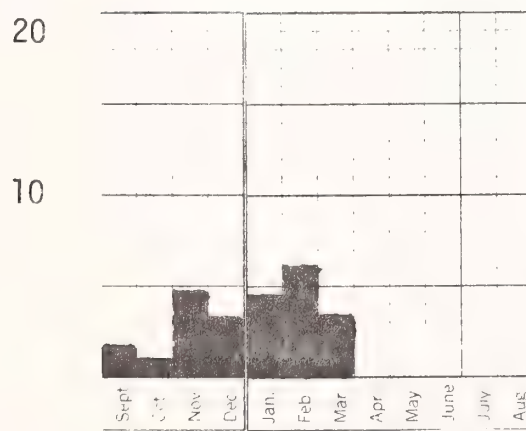
Poplar River Area Suspended Sulfate Data  
Scobey Border Station



Particles less than 2.5 microns



Particles from 2.5 to 15 microns



Particles less than 15 microns

1978 - 1979

TABLE 10

POPLAR RIVER AREA SUSPENDED NITRATE DATA\*  
September 1978 - March 1979

Values in micrograms per cubic meter

	Border Station	Richardson	Engberg
Arith. Mean	0.7	1.1	1.1
Max. Reading	2.4	3.8	3.3

\* Measured by a high volume sampler.

TABLE 11

POPLAR RIVER AREA NITRATE SIZING DATA\*  
December 1978 - March 1979

Values in micrograms per cubic meter

	Particles ≤ 2.5 microns	Particles 2.5 to 15 microns	Particles ≥ 15 microns
Arith. Mean	0.50	2.02	2.52
Max. Reading	1.35	4.04	4.93

\* Measured by a dichotomous sampler

### III. METEOROLOGY

#### A. Surface Meteorology

Surface wind speed and direction has been monitored at the Scobey Border site since March 1977. Data through March 1979 are available for this report. Difficulties with equipment caused two major losses of data, the first from mid-May through early September 1977, and the second from mid-August through mid-October 1978. Wind data for March 1977 through March 1979 from the National Weather Service at Glasgow, Montana, located some 70 miles southeast of Scobey, were also available for this report. Tables of wind rose frequency as well as wind rose plots were prepared for both the Scobey and Glasgow sites (see Appendix B).

These data indicate that prevailing winds in the Scobey area generally are from either the northwest through north-northwest or from the east-southeast during nearly all months. The wind pattern is bipolar, with peaks of wind frequency from the northwest and southeast quadrants during nearly all months. There is no clear seasonal variation in wind frequency, except that during the summer months, winds from the southwest through west appear to be somewhat more common than during other seasons. The least common wind directions during virtually all months are from the northeast quadrant.

Average wind speeds at Scobey are typically quite high, ranging from 4 to 7 m/sec. Highest average wind speeds generally occur during the autumn and spring months, with lowest average speeds occurring in the summer. The strongest average winds generally blow from the northwest quadrant and are strongest during the autumn and spring. Calm conditions are uncommon,



occurring from 0.5 to 6.0 percent of the time.

The wind pattern at Glasgow, as in Scobey, is bipolar, with maximums of wind frequency from the northwest and southeast quadrants occurring nearly every month. At Glasgow, the prevailing wind is from the east-southeast during most months, whereas in Scobey, the prevailing wind was almost equally divided between east-southeast and northwest. The least common wind direction was from the northeast quadrant during most months. Average wind speeds varied from about 2 to 10 m/sec, with highest values observed in the autumn and spring. The strongest winds blew from the northwest quadrant during most months, while the lightest average winds blew from the northeast and southwest quadrants with about equal frequency. Calm conditions were uncommon, occurring about 1-5 percent of the time during most months.

#### B. Upper Air Meteorology

Pilot balloons with temperature sondes attached were launched from the Scobey Border site six times weekly (one-half hour after sunrise and 1400 MST on Monday, Wednesday, and Friday) since March 1977. Data through March 1979 have been examined for this report.

Monthly frequency distributions of wind speed and direction, inversions, mixing heights, average wind speed through the mixed layer, and the average lapse rate below the first inversion were prepared from the pilot balloon runs and are included in this report.

A pilot balloon study such as this offers advantages in economy and ease of operation as compared to a more complex radiosonde program, but is also subject to some disadvantages. Chief among these are the limitation of tracking by theodolites to levels lower than the cloud bases; the limited range (approximately 10 km) of the temperature sonde transmitter; the difficulty

of operation in extremely cold weather; and, most seriously, the uncertainty of the rate of ascent of the balloon during unstable conditions. We have found by comparison of calculated ascent rates from dual theodolite tracking runs with the assumed balloon ascent rate, that on afternoons with unstable conditions aloft, such as are quite commonly found during the spring and summer, that the assumed ascent rate may be as much as 50 percent lower than the actual rate of ascent as calculated from dual theodolite readings. Soundings in which the apparent lapse rate from the temperature sonde trace appears to be too great should be discarded. An alternative is to track the balloon with two theodolites, and this is currently being done in Scobey. The need for great accuracy of measurement and the expense of hiring an operator for the second theodolite are among the difficulties associated with a dual theodolite study, but we feel the increased accuracy of the data obtained outweighs the difficulties involved.

An analysis of the wind frequency summaries obtained from the pilot balloon soundings indicates that in the mornings the prevailing wind direction at the surface is from the west-northwest through north-northwest during most months. The most significant exception to this pattern occurred during the spring and summer of 1978, when prevailing winds were from the east through south. This is a reflection of the bipolar wind frequency distribution at Scobey; prevailing winds at the surface are nearly always from either the northwest or southeast quadrants. Furthermore, when the prevailing wind is from one of these quadrants, there is most often a secondary maximum of wind frequency from the other. It appears that the spring and summer months are more likely to experience prevailing winds from the southeast quadrant, while during the autumn and winter months prevailing winds from the northwest quadrant are more common.

Average surface wind speeds in the mornings ranged from 0.8 meters/sec in August 1977 to 5.1 meters/sec in October 1978, and averaged about 2.5 meters/sec. Wind speeds were generally highest during the autumn months and lowest in the summer months. Most often, the highest average wind speeds were those from the prevailing wind direction, while the lowest average wind speeds were typically those from the least common wind direction.

Prevailing wind directions at the 100 and 200 meter levels are generally similar to those at the surface. Beginning at 300 meters, during most months, the prevailing wind tends to change with height, becoming generally west through north-northwest at levels of 500 meters and higher. The only exceptions to this pattern during the period of this study were in June 1977, when the prevailing wind was south-southwest through south up to 2000 meters; July 1977 with prevailing wind southwest through west; and in April and May 1978, when prevailing winds were from the east through south-southeast.

Average wind speeds aloft increased with height, typically becoming three to six times faster at 1000 meters than at the surface. Most months, the average wind speed increased gradually up to 200 meters, then more rapidly up to 1000 meters, and then more slowly again above 1000 meters. Wind speeds at all levels tended to be greatest in the spring and autumn and lowest in the summer.

Analysis of the afternoon wind frequency distributions indicates that the prevailing surface winds were most commonly from the west through north-northwest. Some exceptions to this pattern occurred, the most common being a prevailing wind from east-southeast through south-southeast. The spring and autumn months appear to be more likely to have prevailing winds from the southeast quadrant. The afternoon wind frequency distribution was bipolar, as was



the mornings; prevailing surface winds were nearly always from either the northwest or southeast quadrants, and a secondary maximum of wind frequency was noted from the southeast quadrant if the prevailing wind was from the northwest, and vice versa.

Average surface wind speeds in the afternoons varied from 2.1 meters/sec in September 1977 to 7.8 meters/sec in October 1978, and averaged about 5 meters/sec. Average wind speeds were highest during the spring and autumn months and lowest during the summer months. Average afternoon wind speeds were generally from two to four times greater than average morning wind speeds.

Prevailing wind directions aloft during the afternoons show less variation with height than do the corresponding morning values. Prevailing winds at all levels were primarily from west through north-northwest. The only significant exceptions to this pattern were in April and October 1977, with prevailing winds from the southwest; April 1978 which had prevailing winds from the southeast; and June 1977, in which no clear pattern was present. August and November 1977, as well as March 1979, had winds from the south-southeast through south in the lowest 100-200 meters, and prevailing winds from the northwest through north at higher levels.

Wind speeds aloft increased with height, generally becoming two to three times greater at 1000 meters than at the surface. The most rapid increase in wind speed occurred between the surface and 500 meters; thereafter, the average wind speed increased slowly with height. The highest average wind speeds at all levels occurred during the spring and autumn months, while the lowest speeds were noted during the summer months.

Temperature sondes were sent aloft with the pilot balloons beginning in April, 1977. These temperature sondes provided a record of temperature as

the balloon ascended, and from this data inversion heights, thicknesses, and Holzworth classifications, mixing heights, average wind speed through the mixed layer, and temperature lapse rates below the first inversion were calculated. From these data, monthly summaries of each parameter were prepared and are included in this report.

An examination of the frequency summary of inversion tables reveals that during the morning soundings, one or more inversions, either surface based or aloft, was nearly always present. A seasonal pattern was evident in the frequency of soundings with no inversion present; such soundings were most common during the autumn and spring months, but were almost entirely absent during the summer and winter months. When inversions were present, which was the case 60 to 100 percent of the time, the most common base height was the surface during the spring and summer of 1977 and the summer of 1978. During the winter of 1977-78, base heights of 1001-1500 meters were most common, while during the winter of 1978-79, base heights of 251-500 meters were most prevalent. The most frequent thickness of these inversions, during nearly all months, was from 1-100 meters. The thickness of inversions was clearly related to their base heights; inversions with base heights at or near the surface were generally thicker than inversions based at greater heights. Inversions based more than 500 meters above ground level were very rarely more than 100 meters thick. Inversions based within 100 meters of the surface, on the other hand, were usually from 101 to 250 meters thick and occasionally were more than 500 meters thick. The thickness of these near-surface inversions showed a seasonal variation, with the wintertime inversions being thicker than those of other seasons.

The intensity of morning surface based inversions (on the Holzworth

classification scale, see Table 12) was very similar from month to month, with the most common Holzworth type being 3 or 4 during nearly all months. The intensity of elevated inversions did exhibit a seasonal variation, with type 1 inversions generally the most common in the spring, type 3 during the winter, and type 2 in the summer and autumn. There was also a relation between base height and intensity; lower based inversions were generally more intense than those based at higher levels.

During the afternoon soundings, fewer inversions were present than in the mornings. Surface based inversions were very uncommon, except during the winter months, when they were quite frequent. Elevated inversions were common during the winter and spring months, but were quite uncommon during the summer and autumn. During most months, the most common inversion base heights were from 1000-2000 meters above ground level. During the winter months, however, the most common base heights were usually from 250 to 500 meters. During all months except March 1979, the most common inversion thickness was from 1-100 meters. As in the mornings, there was a relation between inversion base height and thickness; inversions based at lower levels tend to be thicker than those based at higher levels.

The intensity of afternoon surface-based inversions (on the Holzworth scale) was similar from month to month, the most common intensities being 2 or 3. These afternoon surface based inversions were in general not as strong as their morning counterparts, which were usually of Holzworth types 3 and 4. Elevated inversions also tended to be less intense in the afternoons than in the mornings, with the most common types being 1 and 2. A seasonal trend was apparent in the intensities of these elevated inversions; summertime inversions tended to be less intense than those observed during other seasons. A variation



of intensity with height was also apparent during most months, with lower based inversions tending to be more intense than those based at higher levels.

Mixing heights, average wind speed through the mixed layer, and the average lapse rate below the first inversion were calculated for each temperature sounding, and monthly frequency distributions of these parameters are included in this report.

An examination of the monthly summaries indicates that in the mornings, the most common mixing heights were from 0 to 100 meters during most months. During some months, most notably March through June 1978 and October 1978 through March 1979, average mixing heights were greater, most commonly between 101 and 250 meters. The average wind speed through the mixed layer varied from 4.2 m/sec in February 1979 to 11.7 m/sec in October 1978, and averaged about 7 m/sec. Highest values of wind speed were generally noted in the spring and autumn months, while lowest values usually occurred in the winter. It should be noted that the higher wind speeds through the mixed layer in the spring and autumn are at least partially due to the greater mixing heights occurring during those months, since wind speed generally increases with height.

During the afternoon soundings, the most common mixing heights were greater than 1500 meters during the summer months, and usually between 251 and 500 meters during the winter months. The spring and autumn months typically had most common mixing heights of either greater than 1500 meters or from 251 to 500 meters. The low afternoon mixing heights during the winter are a consequence of the presence in this area of a semi-permanent inversion in the lowest 1000 meters due to the presence of a shallow arctic air mass over the region.

The average wind speed through the mixed layer during the afternoon



soundings varied from 5.1 m/sec in February 1978 to 11.1 m/sec in May 1977, and averaged about 9 m/sec. These values are greater than those found during the morning sounding because wind speeds at lower levels are normally greater in the afternoons than during the mornings, and also because of the greater mixing heights during the afternoon, which results in the greater wind speeds at higher levels being included in the average wind speed through the mixed layer. Accordingly, the values of average wind speed through the mixed layer vary as the mixing height, with highest values occurring in the spring, summer, and autumn when mixing heights are greatest, and lowest values are noted in the winter, when mixing heights are smallest.

Average lapse rates below the first inversion during the morning soundings averaged about  $-0.75$  deg. C/100m and ranged from  $-0.19$  deg C/100 m in August 1978 to  $-4.49$  deg C/100m in April 1977. (The latter value is very questionable.) During the afternoon soundings, lapse rates below the first inversion ranged from  $-0.52$  deg C/100 m in December 1977 to  $-2.03$  deg. C/100m in July 1977 and averaged about  $-1.4$  deg C/100m.

Temperature data from the temperature sonde traces was broken down by month into four categories (Tables 15 and 16) in order to investigate possible behavior of the plume from the Poplar River power plant. The stack at the Poplar River plant is 122 meters high. Allowing about 80 meters for plume rise, it was assumed that inversions with tops less than 200 meters above ground level would not inhibit dispersion of the plume and in fact would prevent the plume from reaching the ground. Inversions with tops between 200 and 500 meters above ground level, it was felt, would contain the plume and fumigations could result during inversion breakup. It was assumed that any inversion based above 500 meters above ground level would have no effect on

the plume. Accordingly, each temperature trace obtained was assigned into one of four categories and monthly frequency tables of these categories were prepared. The categories are: I, inversion tops less than 200 m A.G.L.; II, inversion tops between 200 and 500 meters A.G.L.; III, no inversion present below 500 meters A.G.L., but inversions present at higher levels; and IV, no inversions present.

An examination of the frequency tables for the morning soundings shows that category II is the most common during all months, typically occurring up to 80 percent of the time. A seasonal variation in the occurrence of category II is apparent, with it being more common in the winter and summer months and less common during the spring and autumn months. Categories I and III are the next most common, generally occurring less than 20 percent of the time. There is no obvious seasonal variation in category I, but category III is more common in the spring and autumn months than during the winter and summer.

During the afternoon soundings, the most common category noted was category III during all months except for the winter months when category II was most common. The second most common category was category IV during the summer and autumn months.

Category II represents the situation that will most inhibit dispersion of pollutants, and it occurs on most nights throughout the year and during most afternoons in the winter months. Due to the rather high wind speeds through the mixed layer found in the Scobey area, pollutants will tend to be mixed throughout the inversion layer rather than accumulating near the top. This effect should be especially pronounced in the autumn and spring when wind speeds are highest. Fumigation episodes should be most frequent during the

summer, when the nocturnal inversion rarely persists through the day. Greatest concentrations of pollutants near the surface, other than during fumigation episodes, should occur during the winter, when category II conditions can persist for days and even weeks at a time.

Average monthly temperature traces from the temperature sonde soundings were computed and plotted for both morning and afternoon soundings. The purpose was to provide a graphical method of obtaining average monthly mixing heights. The average monthly mixing height cannot be obtained from the mixing height values computed for the individual soundings because of the occurrence of cases with no intersection between the temperature trace and the dry adiabat. The average mixing height is derived from the monthly average temperature trace by drawing a dry adiabat starting at the surface at a temperature 3 deg C warmer than the surface temperature of the trace for morning soundings, and 2 deg C warmer than the surface temperature for afternoon soundings. The height at which the dry adiabat intersects the average temperature trace is the mixing height and the values so obtained are tabulated in Table 14.

An examination of these tables shows a seasonal variation in average mixing heights in the mornings, with lowest heights mostly less than 100 m in the summer months and greatest heights of 150 to 300 m occurring during the spring and autumn months.

During the afternoon soundings, the greatest average mixing heights of 1000 to 1500 meters were found during the summer months (some summer months are missing due to too small a sample size to make results meaningful). The lowest average mixing heights, typically 200 to 300 meters, were found during the winter months.



An acoustic radar was installed at the Scobey Border site in late April 1978 and has been operated continuously since. Data through March 1979 are included in this report.

The monostatic acoustic sounder manufactured by AeroEnvironment, Inc. consists of a transmit/receive dish antenna approximately four feet in diameter and a recording/display unit which produces a permanent chart record. Approximately every 22 seconds the antenna emits a 1600 Hz sound pulse. The pulse is directed vertically upward and is reflected downward to the receiver, if stable layers are present, by small-scale turbulence and temperature discontinuities associated with inversions. The echoes received are recorded electrically on heat-sensitive chart paper. The chart produced is interpreted by the operator, who obtains from it a stability estimate (stable, unstable, or neutral) of the lowest 100 meters of the atmosphere, and the height, thickness, and type of any inversion present. These data are further analyzed by computer and monthly summaries of first (lowest) and second (second lowest if multiple inversions are present) inversions are produced. A two-hour stability analysis is also performed, which assigns data into one of six stability categories, A through F, where A is the most unstable and F the most stable. These classifications are based on the operator's stability estimate plus wind speed, time of day, solar altitude angle, and cloud conditions. A more complete discussion of the procedure followed can be found in a report recently published by the Air Quality Bureau (Gelhaus, 1979b).

An examination of the monthly first inversion frequency of occurrence tables reveals that the most common inversion base height was the surface during the evening (1800-2400 MST) and nighttime (0000-0600) hours during all months. During the morning (0600-1200) hours the most common base height was from 10)



to 200 meters, except for the winter months, when surface-based inversions were most frequent. During the afternoons (1200-1800) surface-based inversions were most common during all months except April, June and July 1978 and February 1979, when base heights of 100 and 200 meters were most common.

The most common inversion thicknesses during the mornings, evenings and nights were from 101 to 300 meters during all months except the winter months, when the most common inversion thickness was from 301 to 500 meters. The one exception occurred during August mornings, when a thickness of 1 to 100 meters was most common. During the afternoons, thicknesses of 301 to 500 meters were most common in November through January and March, with thicknesses of less than 100 meters being the most common during most other months.

Second inversions were quite uncommon, and did not occur at all during two months. Those that did occur were most commonly based from 300 to 500 meters above ground level. Most of these inversions were from 100 to 300 meters thick, although nearly as many were less than 100 meters thick.

Table 19 shows the percentage frequency of occurrence of inversions. This table shows that inversions are present nearly all of the time during the evening and nighttime hours. Inversions tend to be slightly less common in these time periods during the spring and autumn. During the morning hours inversions were present more than 80 percent of the time during most months. During the afternoons, inversions were present only 7 to 17 percent of the time during the spring and summer but beginning in September became progressively more frequent, being present 100 percent of the time in January, after which the percentage began to decline again.

The percentage frequency of second inversions was also tabulated, and these figures show that second inversions are most frequent during the evening

and nighttime hours in the summer, typically occurring 10-20 percent of the time. Second inversions were least common during the afternoons, occurring less than 10 percent of the time. Autumn had the greatest frequency of afternoon second inversion occurrences. Morning second inversions occurred up to 13 percent of the time and were most frequent during the summer and least common during late autumn and early spring.

Tables of percentage frequency of occurrence of stability classifications were prepared (Tables 20 through 25). For the period 0000-2400 MST, category E, slightly stable, was the most common category during all months except for May through August, 1978, when category C, slightly unstable, was most common. Category A, very unstable, was the most uncommon category, and only occurred in May, June and July.

During the nighttime hours 0000-0600 MST, category E, slightly stable, was most common during all months except July 1978, when category F, moderately stable was most common. Categories E and F together occurred at least 70 percent of the time during all months. Category C, slightly unstable, rarely occurred during this time period, but was most likely to occur during the autumn and spring months. Similarly, category D, neutral, was most likely to occur in the late winter, spring and autumn, and least likely to occur in January and August.

In the morning hours 0600-1200, a marked seasonal variation in frequency of occurrence of stability categories was apparent, with category C being most common in April through October, and category D most common from November through March. The remaining categories showed a similar variation, with the more unstable categories occurring more frequently during the warmer months and the more stable categories being more common during the colder months.

This distribution is partly a function of time of sunrise, but is also due to the semi-permanent presence of an arctic air mass over the area from November through March.

The afternoon hours 1200-1800 MST also showed an obvious seasonal variation, with category C being the most common from March through November, category E most common from November through January, and category D most frequent in February. This pattern again was due to the arctic air mass over the area during the winter.

The evening hours of 1800-2400 MST showed a pattern very similar to the nighttime hours, with category E being most common during all months except May and June, when category D was most common.

As revealed by the acoustic radar, the most important factors affecting dispersion of pollutants in the Scobey area were the presence of a nearly continuous inversion at or near the surface from November through March, and the preponderance of stable conditions in the lowest 100 meters during this time period. Both these factors will tend to inhibit dispersion during the winter in this area. During the other seasons, stable conditions usually occur at night, but inversions generally break up shortly after sunrise. During the spring and autumn months, unstable conditions occur fairly often even at night, and dispersion should be most efficient during these seasons.

TABLE 12

Holzworth Lapse Rate Categories (Modified)  
Values in deg C/100m

<u>Non-Inversion Class</u>	<u>Lapse Rate</u>	<u>Description</u>
1	$< -1.60$	Very Superadiabatic
2	-1.21 to -1.60	Superadiabatic
3	-0.81 to -1.20	Near Dry Adiabatic
4	-0.41 to -0.80	Near Standard Atmosphere
5	0.00 to -0.40	Weak Lapse
<u>Inversion Class</u>	<u>Lapse Rate</u>	<u>Description</u>
1	0.00 to +0.47	Weak Inversion
2	+0.48 to +1.14	Moderate Inversion
3	+1.15 to +2.82	Strong Inversion
4	+2.83 to +6.00	Very Strong Inversion
5	$> +6.00$	Extreme Inversion

(Holzworth, 1974)



Table 13

## SCOBEY, MONTANA MEANS AND EXTREMES

## Temperature (deg F)

	Average High (1949-78)	Average Low (1949-78)	Average (1949-78)	Extreme High (1940-78)	Year	Extreme Low (1940-78)	Year	Average Warmest Month	Year	Average Coldest Month	Year
Jan	17.8	- 3.3	7.2	55	1944	-43	1954	25.1	1944	-14.1	1950
Feb	26.9	4.7	15.8	59	1973	-40	1962	30.6	1954	2.8	1949
Mar	36.7	14.1	25.4	77	1946	-32	1951	39.0	1973	9.7	1951
Apr	55.1	29.1	42.1	90	1952	-13	1975	49.8	1952	33.2	1975
May	68.9	40.5	54.2	97	1960	7	1954	60.6	1958	49.4	1974+
Jun	77.2	49.3	63.2	100	1970+	23	1951	70.4	1961	57.4	1945
Jul	85.1	54.3	69.7	106	1960+	34	1945	74.0	1960	63.9	1972
Aug	84.2	52.1	68.1	105	1949	26	1952	75.9	1971	57.9	1977
Sep	72.1	41.6	56.8	101	1978	10	1965	64.1	1963	45.4	1965
Oct	59.5	31.9	45.7	90	1943	- 4	1957	54.6	1963	38.7	1959
Nov	39.6	17.5	28.5	75	1975	-28	1950	39.6	1954+	14.3	1955
Dec.	25.2	4.7	14.9	60	1942	-37	1977	26.5	1954	0.7	1964
Year	54.0	28.0	41.0	106		-43		75.9	1977 Aug.	-14.1	1950 Jan.

## Precipitation (Inches)

	Average (1941-70)	Wettest (1940-78)	Year	Driest (1940-78)	Year	Most in 24 hours (1940-78)	Year	Most Snow (1940-52)	Year
Jan	.58	1.93	1948	T	1973+	.88	1951	22.0	1950
Feb	.50	2.61	1951	.00	1976+	.79	1951	35.4	1951
Mar	.60	2.94	1951	T	1946	1.67	1951	25.6	1951
Apr	.99	2.81	1970	.02	1949	1.63	1970	19.0	1940
May	1.67	5.47	1972	.12	1958	1.75	1972	1.0	1943
Jun	3.04	8.18	1976	.92	1966	2.90	1976	T	1943
Jul	1.72	9.10	1946	.34	1951	6.90	1946		
Aug	1.76	4.69	1968	.11	1978	2.05	1968		
Sep	1.22	4.63	1959	.05	1960	1.99	1954	T	1946+
Oct	.62	1.71	1953	.00	1978+	1.30	1971	5.7	1942
Nov	.42	1.61	1941	.00	1949	.74	1941	18.4	1941
Dec	.50	1.64	1973	.00	1966	.83	1945 July	16.5	1945 Feb
Year	13.62	21.90	1951	6.98	1971	6.90	1946	35.4	1951

+Also occurred previous year(s)

Source: Monthly Climatological Data: Montana

TABLE 14  
Scobey, Montana

Average Monthly Mixing Heights  
(from average monthly temperature traces)

	Month	Morning	Afternoon
1979	Apr	55	-
	May	125	565
	June	95	1550
	Jul	75	-
	Aug	100	-
	Sep	65	-
	Oct	75	-
	Nov	115	465
	Dec	115	270
1978	Jan	105	200
	Feb	85	265
	Mar	155	435
	Apr	315	1490
	May	215	-
	Jun	90	-
	Jul	105	1230
	Aug	70	-
	Sep	105	-
	Oct	190	1270
	Nov	210	490
	Dec	205	275
1979	Jan	150	265
	Feb	105	345
	Mar	285	520

Scobey, Montana  
Inversion Frequency Table - Morning Soundings  
(Values in percent)

TABLE 15

		Category				number of runs
	Month	I	II	III	IV	
1977	Apr	20.0	80.0	0.0	0.0	10
	May	0.0	60.0	0.0	40.0	5
	Jun	23.1	69.2	7.7	0.0	13
	Jul	16.7	83.3	0.0	0.0	12
	Aug	15.4	76.9	0.0	7.7	13
	Sep	27.3	63.6	0.0	9.1	11
	Oct	15.4	61.5	15.4	7.7	13
	Nov	9.1	63.6	18.2	9.1	11
	Dec	25.0	62.5	12.5	0.0	8
1978	Jan	0.0	100.0	0.0	0.0	12
	Feb	0.0	87.5	12.5	0.0	8
	Mar	7.1	71.4	7.1	14.3	14
	Apr	0.0	81.8	18.2	0.0	11
	May	16.7	66.7	16.7	0.0	12
	Jun	0.0	100.0	0.0	0.0	4
	Jul	9.1	81.8	9.1	0.0	11
	Aug	0.0	100.0	0.0	0.0	12
	Sep	0.0	80.0	20.0	0.0	10
	Oct	11.1	66.7	11.1	11.1	9
	Nov	10.0	60.0	30.0	10.0	10
	Dec	0.0	75.0	12.5	12.5	8
1979	Jan	12.5	76.0	0.0	12.5	8
	Feb	0.0	100.0	0.0	0.0	5
	Mar	0.0	63.6	36.4	0.0	11

Category I - inversion top less than 200 m

Category II - inversion top between 200 and 500 m

Category III - no inversions present below 500 m; inversion present at higher levels

Category IV- no inversions present

Scobey, Montana  
Inversion Frequency Table - Afternoon Soundings  
(Values in percent)

TABLE 16

		Category				number of runs
	Month	I	II	III	IV	
1977	Apr	0.0	12.5	62.5	25.0	8
	May	16.7	33.3	33.3	16.7	6
	Jun	0.0	46.2	53.8	0.0	13
	Jul	7.7	46.2	46.2	0.0	13
	Aug	7.7	15.4	53.8	23.1	13
	Sep	0.0	16.7	50.0	33.3	12
	Oct	0.0	16.7	75.0	8.3	12
	Nov	7.7	23.1	53.8	15.4	13
	Dec	0.0	80.0	0.0	20.0	10
1978	Jan	8.3	91.7	0.0	0.0	12
	Feb	0.0	90.0	10.0	0.0	10
	Mar	7.1	56.1	35.7	0.0	14
	Apr	9.1	18.2	72.7	0.0	11
	May	0.0	16.7	83.3	0.0	12
	Jun	0.0	0.0	100.0	0.0	3
	Jul	9.1	27.3	45.5	18.2	11
	Aug	0.0	38.5	46.2	15.4	13
	Sep	0.0	0.0	87.5	12.5	8
	Oct	0.0	0.0	90.0	10.0	10
	Nov	9.1	45.5	45.5	0.0	11
	Dec	0.0	87.5	0.0	12.5	8
1979	Jan	0.0	80.0	20.0	0.0	10
	Feb	0.0	85.7	14.3	0.0	7
	Mar	0.0	30.0	70.0	0.0	10

Category I - inversion top less than 200 m

Category II - inversion top between 200 and 500 m

Category III - no inversions present below 500 m; inversion present at higher levels

Category IV - no inversions present



TABLE 17

## SCOBEY BORDER SITE

Most Common First Inversion Base Height and Thickness  
by Time and Month, From Acoustic Radar

Month	0001-0600 MST		0601-1200 MST		1201-1800 MST		1801-2400 MST	
	Base	Thickness	Base	Thickness	Base	Thickness	Base	Thickness
1978 Apr	sfc	101-300	200	101-300	200	1-100	sfc	101-300
May	sfc	101-300	100	101-300	sfc	101-300	sfc	101-300
Jun	sfc	101-300	200	101-300	100	1-100	sfc	101-300
Jul	sfc	101-300	100	101-300	200	101-300	sfc	101-300
Aug	sfc	101-300	200	1-100	sfc	1-100	sfc	101-300
Sep	sfc	301-500	200	101-300	sfc	1-100	sfc	101-300
Oct	sfc	101-300	200	101-300	sfc	101-300	sfc	101-300
Nov	sfc	101-300	sfc	101-300	sfc	301-500	sfc	101-300
Dec	sfc	301-500	sfc	301-500	sfc	301-500	sfc	301-500
1979 Jan	sfc	301-500	sfc	301-500	sfc	301-500	sfc	301-500
Feb	sfc	301-500	sfc	301-500	200	101-300	sfc	301-500
Mar	sfc	301-500	sfc	301-500	sfc	301-500	sfc	301-500

TABLE 18  
 SCOBEY BORDER SITE  
 Most Common Second Inversion Base Height and Thickness  
 by Time and Month, From Acoustic Radar

Month	0001-0600 MST		0601-1200 MST		1201-1800 MST		1801-2400 MST	
	Base	Thickness	Base	Thickness	Base	Thickness	Base	Thickness
1978 Apr	--	--	--	--	--	--	--	--
May	300	1-100	400	301-500	--	--	200	1-100
Jun	400	1-100	300	1-100	--	--	200	101-300
Jul	400	101-300	300	101-300	--	--	300	101-300
Aug	300	1-100	200	101-300	300	101-300	200	101-300
Sep	500	101-300	500	1-100	300	1-100	300	101-300
Oct	800	1-100	300	101-300	200	101-300	300	1-100
Nov	500	1-100	--	--	500	1-100	300	1-100
Dec	---	--	--	--	--	--	300	101-300
1979 Jan	400	101-300	600	101-300	600	1-100	300	1-100
Feb	--	---	400	1-100	400	101-300	700	1-100
Mar	--	--	--	--	--	--	--	--

TABLE 19

## SCOBEY BORDER SITE

Percent Frequency of Occurrence of Periods with Inversion(s) Present

Month	0001-0600 MST		0601-1200 MST		1201-1800 MST		1801-2400 MST	
	First Inversion	Second Inversion	First Inversion	Second Inversion	First Inversion	Second Inversion	First Inversion	Second Inversion
1978 Apr	66.7	0.0	16.7	0.0	16.7	0.0	83.3	0.0
May	90.0	14.3	68.8	3.6	7.4	0.0	86.7	7.1
Jun	100.0	20.0	96.7	6.7	13.3	0.0	100.0	13.3
July	96.8	32.3	93.5	12.9	9.7	0.0	100.0	12.9
Aug	100.0	6.5	96.8	9.7	6.7	6.5	100.0	19.4
Sep	83.3	3.3	76.7	3.3	50.0	6.7	86.7	10.0
Oct	90.3	3.2	90.3	6.5	87.1	9.7	96.7	9.7
Nov	86.7	3.3	80.0	0.0	83.3	3.3	83.3	3.3
Dec	100.0	0.0	89.7	0.0	93.3	0.0	96.8	3.2
1979 Jan	96.7	3.2	87.1	6.5	100.0	6.5	100.0	3.2
Feb	96.4	0.0	92.9	3.6	88.5	3.6	100.0	3.6
Mar	87.1	0.0	87.1	0.0	77.4	0.0	83.9	0.0

TABLE 20  
SCOBEEY BORDER SITE  
Percent Frequency of Occurrence of Stability Classifications  
0000-2400 MST

		<u>Category</u>							
<u>Month</u>		A	B	C	D	E	F	U	M
1978	Apr	0.0	0.0	4.7	3.6	5.6	1.1	0.0	85.0
	May	0.3	0.3	31.5	29.0	17.2	14.8	0.0	7.0
	Jun	1.4	3.3	28.1	27.5	21.9	17.8	0.0	0.0
	Aug	0.0	2.2	34.9	12.4	29.0	20.4	0.0	1.0
	Sep	0.0	0.0	26.9	18.9	36.1	13.3	4.7	0.0
	Oct	0.0	0.8	22.3	11.6	34.7	24.2	6.5	0.0
	Nov	0.0	2.2	13.3	15.3	46.1	17.8	4.4	0.8
	Dec	0.0	0.3	3.5	14.5	63.2	16.4	1.9	0.3
1979	Jan	0.0	1.1	1.9	12.6	58.3	24.7	0.3	1.1
	Feb	0.0	0.9	11.0	32.7	43.5	11.9	0.0	0.0
	Mar	0.0	2.2	21.0	19.9	34.1	21.0	1.9	0.0

A very unstable  
 B moderately unstable  
 C slightly unstable  
 D neutral  
 E slightly stable  
 F moderately stable  
 U unknown  
 M missing



TABLE 21  
 SCOBEY BORDER SITE  
 Percent Frequency of Occurrence of Stability Classifications  
 0000-0600 MST  
Category

<u>Month</u>	A	B	C	D	E	F	U	M
1978 Apr	0.0	0.0	0.0	2.2	10.0	1.1	0.0	86.7
May	0.0	0.0	1.1	25.8	35.5	31.2	0.0	6.5
Jun	0.0	0.0	0.0	6.7	47.8	45.6	0.0	0.0
Aug	0.0	0.0	0.0	1.1	51.6	47.3	0.0	0.0
Sep	0.0	0.0	0.0	11.1	56.7	25.6	6.7	0.0
Oct	0.0	0.0	2.2	4.3	46.2	40.9	6.5	0.0
Nov	0.0	0.0	5.6	14.4	58.9	17.8	3.3	0.0
Dec	0.0	0.0	0.0	14.0	59.1	26.9	0.0	0.0
1979 Jan	0.0	0.0	0.0	6.5	64.5	25.8	0.0	3.2
Feb	0.0	0.0	2.4	27.4	52.4	17.9	0.0	0.0
Mar	0.0	1.1	3.2	30.1	33.3	32.3	0.0	0.0

A very unstable  
 B moderately unstable  
 C slightly unstable  
 D neutral  
 E slightly stable  
 F moderately stable  
 U unknown  
 M missing

TABLE 22

## SCOBEY BORDER SITE

Percent Frequency of Occurrence of Stability Classifications  
0600-1200 MST

<u>Month</u>	<u>Category</u>							
	A	B	C	D	E	F	U	M
1978 Apr	0.0	0.0	7.8	5.6	0.0	0.0	0.0	86.7
May	1.1	1.1	52.7	36.6	1.1	1.1	0.0	6.5
Jun	5.6	6.7	40.0	44.4	1.1	2.2	0.0	0.0
Aug	0.0	2.2	45.2	33.3	12.9	3.2	0.0	3.2
Sep	0.0	0.0	36.7	36.7	16.7	5.6	4.4	0.0
Oct	0.0	2.2	36.6	22.6	28.0	7.5	3.2	0.0
Nov	0.0	3.3	18.9	14.4	44.4	15.6	1.1	2.2
Dec	0.0	0.0	5.4	18.3	62.4	11.8	2.2	0.0
1979 Jan	0.0	2.2	2.2	17.2	59.1	17.2	1.1	1.1
Feb	0.0	0.0	13.1	32.1	47.6	7.1	0.0	0.0
Mar	0.0	4.3	32.3	15.1	36.6	11.8	0.0	0.0

A very unstable  
 B moderately unstable  
 C slightly unstable  
 D neutral  
 E slightly stable  
 F moderately stable  
 U unknown  
 M missing

SCOBEY BORDER SITE

Percent Frequency of Occurrence of Stability Classifications

1200-1800 MST

TABLE 23

Category

<u>Month</u>	A	B	C	D	E	F	U	M
1978 Apr	0.0	0.0	11.1	4.4	1.1	0.0	0.0	83.3
May	0.0	0.0	72.0	20.4	1.1	0.0	0.0	6.5
Jun	0.0	6.7	72.2	20.0	1.1	0.0	0.0	0.0
Aug	0.0	4.3	88.2	4.3	2.2	0.0	0.0	1.1
Sep	0.0	0.0	68.9	15.6	12.2	0.0	3.3	0.0
Oct	0.0	1.1	50.5	17.2	19.4	4.3	7.5	0.0
Nov	0.0	5.6	23.3	20.0	27.8	15.6	6.7	1.1
Dec	0.0	0.0	5.4	19.4	65.6	6.5	3.2	0.0
1979 Jan	0.0	2.2	5.4	18.3	52.7	21.5	0.0	0.0
Feb	0.0	3.6	23.8	39.3	31.0	2.4	0.0	0.0
Mar	0.0	3.2	41.9	11.8	26.9	14.0	2.2	0.0

A very unstable  
 B moderately unstable  
 C slightly unstable  
 D neutral  
 E slightly stable  
 F moderately stable  
 U unknown  
 M missing

TABLE 24  
 SCOBEY BORDER SITE  
 Percent Frequency of Occurrence of Stability Classifications  
 1800-2400 MST  
Category

<u>Month</u>	A	B	C	D	E	F	U	M
1978 Apr	0.0	0.0	0.0	2.2	11.1	3.3	0.0	83.3
May	0.0	0.0	0.0	33.3	31.2	26.9	0.0	8.6
Jun	0.0	0.0	0.0	38.9	36.7	24.4	0.0	0.0
Aug	0.0	0.0	0.0	21.5	44.1	34.4	0.0	0.0
Sep	0.0	0.0	2.2	12.2	58.9	22.2	4.4	0.0
Oct	0.0	0.0	0.0	2.2	45.2	44.1	8.6	0.0
Nov	0.0	0.0	5.6	12.2	53.3	22.2	6.7	0.0
Dec	0.0	1.1	3.2	6.5	65.6	20.4	2.2	1.1
1979 Jan	0.0	0.0	0.0	8.6	57.0	34.4	0.0	0.0
Feb	0.0	0.0	4.8	32.1	42.9	20.2	0.0	0.0
Mar	0.0	0.0	6.5	22.6	39.8	25.8	5.4	0.0

A very unstable  
 B moderately unstable  
 C slightly unstable  
 D neutral  
 E slightly stable  
 F moderately stable  
 U unknown  
 M missing



## IV. VISIBILITY

Visibility related measurements have been taken in the Poplar River area since March 1977 with a variety of measurement techniques. During the first year of the study (March, 1977 - February 1978) two methods of visibility assessment were used. These were a two channel sun photometer (380 nm and 500 nm) and a diffuse radiation system (300 to 2800 nm pyranometer and pyrheliometer). Also measurements of meteorological and air quality variables were made during the same time period.

Electromagnetic radiation from the sun has approximately the spectral content of a black body with temperature near 5900 K. Superimposed thereon are atomic and molecular emissions and absorptions. The majority (98%) of the solar spectral irradiance lies between 294 and 4000 nm. The most important spectral region is from 300 to 4000 nm for solar-thermal conversion systems and from 400 to 1100 nm for photovoltaic conversion.

The spectral energy density of the sun's radiation is nearly constant and is assumed as constant for this study. The principal affects at ground level are due to the rotation of the earth, the properties of the atmosphere, and to a much less extent, the earth-sun distance.

Scattering by air molecules (Rayleigh scattering) has a sizeable effect on the intensity of the direct solar irradiation at the shorter visible and ultraviolet wave lengths. The scattering coefficient is approximately proportional to the inverse fourth power of the wave length. In the ultraviolet and the longer visible and infrared wave lengths, absorption by atmospheric gases is important.

Of the gases occurring naturally, the greatest effect on solar radiation is due to water vapor and ozone. Carbon dioxide, methane, nitrogen dioxide, and oxygen also play a role, but a relatively minor one in the normal atmosphere. However, man-made gaseous pollution and volcanic gases may result in significant absorption locally.

Let  $I_\lambda$  be the irradiance at wavelength  $\lambda$  at some observing point and  $I'_\lambda$  the irradiance at wavelength  $\lambda$  at some nearby observing point further from the sun;  $\Delta X$  and  $\sigma$  will represent the separation between these two points and the extinction per unit length, respectively. If the distance between the two points becomes infinitesimal, then the relation is written:

$$-dI_\lambda = I_\lambda \sigma dx$$

The incremental extinction  $\sigma dx$  may be rewritten  $\sigma_m dM_h$  in terms of relative optical air mass  $M_h$  and the extinction per unit optical air mass  $\sigma_m$ . The relative optical air mass  $M_h$  is the amount of optical atmosphere between the sun and the observing point divided by the amount of optical atmosphere vertically above the observing point.

Extinction of sunlight is primarily due to ozone and water vapor absorption, and aerosol and molecular scattering. Expressed mathematically,

$$\sigma_m = B_\lambda + b_\lambda + k_\lambda$$

where  $B_\lambda$ ,  $b_\lambda$  and  $k_\lambda$  are the aerosol scattering or turbidity coefficients as a function of wavelength per unit optical air mass, and absorption by the ozone layer or water vapor per unit optical air mass, respectively.

Incorporating this relation:

$$-dI_\lambda / I_\lambda = (B_\lambda + b_\lambda + k_\lambda) dM_h$$

Integrating this relation from the earth's surface to the top of the atmosphere we obtain:

$$I_\lambda = (I_{0\lambda}/S)e^{-(B_{0\lambda} + b_\lambda + k_\lambda) M_h} \quad \text{Malin (1977)}$$

where  $I_{0\lambda}$  is the extraterrestrial irradiance of wavelength  $\lambda$  at the mean sun-earth distance, and  $S$  a correction factor for the mean sun-earth distance. Because most of the ozone of the atmosphere is above the observing point, regardless of its elevation above sea level, no height or pressure correction is necessary for  $k_\lambda$  specifically for ozone. Background atmospheric aerosol concentrations depend on altitude. However, often local aerosol contributions (aerosol due to wind blown dust, pollutants from stationary and mobile sources, etc.) tend to dominate the turbidity coefficient and  $B_\lambda$  is consequently usually assumed to be altitude independent. The attenuation due to Rayleigh scattering could have been corrected for altitude by multiplying by the ratio of  $p/p_0$  where  $p$  is the station pressure and  $p_0$  is the standard pressure at sea level. However, the correction used here was to take values from Elterman (1968) for the elevation of the Scobey Border Station (743 meters above sea level).

Water vapor absorption does play an important role in affecting the turbidity measured. However, the sun photometer used in the first year of this study consisted only of two channels (380 and 500 nm). No relation could be made as to the effect of the water vapor, only correlations of surface relative humidities or synoptic air masses could be made. The water vapor band is centered at 940 nm. During the second year of the study a second sun photometer containing five wavelength channels of 440, 500, 640, 880, and 940 nm was obtained.

In order to be able to compare  $I_\lambda$  with previous measurements of other studies, the equation must be changed from the natural logarithm to the base 10 logarithm. The basic equation then becomes:

$$I_\lambda = (I_{0\lambda}/S) 10^{\exp(B_\lambda + k_\lambda + b_\lambda)} M_h$$

Solving this equation for the turbidity coefficient gives:

$$B_{\lambda} = (\log (I_{0\lambda}/I_{\lambda} S))/M_h - b_{h\lambda} - k_{\lambda}$$

where  $b_{h\lambda}$  is the scattering due to air molecules at height  $h$ . The resulting base 10 absorption and extinction coefficients per optical air mass are 0.434 times the base  $e$  absorption and extinction coefficients. (malm, 1977). However, all results presented in this report are in base  $e$  and at station pressure, not sea level pressure.

The sunphotometer does not measure the actual irradiance but rather it provides a meter deflection  $J_{\lambda}$  in microamperes which is directly proportional to  $I_{\lambda}$ . Similarly,  $J_{0\lambda}$ , which is the instrument calibration factor, is the meter reading when the irradiance is  $I_{0\lambda}$ . The diopter scale on the sunphotometer provides values of the relative optical air mass,  $M_h$ .

However, the relative optical air mass was calculated in this case by the following set of equations:

$$\begin{aligned} m &= \sec \theta_0 \text{ for zenith angles } 0 \text{ to } 60^\circ \\ m &= \sec \theta_0 - 3.93 \times 10^{-4} \sec \theta_0^{3.65} p/p_0 \\ &\quad \text{for } \sec \theta_0 > 1.5 \\ m &= \sec \theta_0 - 8.61 \times 10^{-4} \sec \theta_0^{2.69} p/p_0 \\ &\quad \text{for } 1.5 < \sec \theta_0 < 15.0 \end{aligned}$$

where  $p$  = site pressure and  $p_0$  = sea level pressure, and  $\theta_0$  = solar zenith angle (Hullstrom, 1977). The solar zenith angle may be calculated by the equation:

$$\cos \theta_0 = \sin \phi \sin \delta + \cos \phi \cos \delta \cos t$$

where:  $\phi$  = latitude of site ( $49^\circ 00'$  for Border Station Site)

$\delta$  = solar declination for that day

$t$  = solar hour angle (angle between apparent noon and time of observation)



Solar hour angle = (true solar noon (MST) -

12:00 MST + longitude correction -

equation of time for date)  $\times 15^{\circ}$ /hour

longitude correction = (site longitude - standard meridian (105 deg W) of mountain time zone)  $\times 4$  min/deg. longitude.

The value obtained should be positive if the site is west of the meridian and negative if east. The longitude of the Border Station site is  $105^{\circ}25'W$ . Therefore the correction is + 1 min. 40 sec.

The equation of time is obtained from standard astronomical tables (World Almanac, 1977) and varies from  $-14 \frac{1}{3}$  to  $+16 \frac{1}{3}$  minutes. Beginning in 1978, the time of ephemeris transit (equivalent to true solar noon) was obtained directly from tables in the American Ephemeris and Nautical Almanac.

The solar declination is also obtained from similar tables (American Ephemeris and Nautical Almanac) and varies from  $-23\frac{1}{2}$  deg. on December 21 to  $+23\frac{1}{2}$  degrees on June 21.

Using the same theory regarding turbidity and the sun photometer, measurements were made for two years over the 300 to 2800 nm broadband and for one year over both the 300 to 2800 nm and 300 to 700 nm wavelengths.

The normal incident direct solar irradiance was measured continuously with two Eppley pyrhemometers. The one unit was unfiltered and monitored the 300 to 2800 nm wavelength while the other unit had a RG -8 filter which allowed only the 300 to 700 nm wavelength to be measured. This then allowed the indirect measurement of the 700 to 2800 nm wavelength which contains the region most affected by water vapor absorption. Similarly, two Eppley pyranometers were used to measure the same two wavelength bands as the pyrhemometers only this time measuring the total solar irradiance. From comparisons of the two measurement methods, an indirect measure was made of

the amount of diffuse or scattered solar radiation on a continuous basis. As with the turbidity measurements, all results for the diffuse radiation are given in base e, at station pressure and using the Volz (1959) method.

#### A. Turbidity

Tables 25 through 27 summarize the daily trends of the six channels of the sun photometer measurements. The 380 nm and 500 nm channel measurements extend over two years while the four remaining channels cover only eleven months.

Looking first at Table 25, the 380 nm wavelength trend shows a marked increase of turbidity in the summer months over the remainder of the year. The summer averaged 0.25, 0.29, and 0.26 for 0900, 1200, and 1500 MST, respectively. The lowest turbidities occurred in the winter with values of 0.10, 0.12, and 0.07 for 0900, 1200, and 1500 MST, respectively. The three time periods of 0900 to 1500 also showed a trend toward highest values at 1200 and lowest values at 0900.

Table 25 shows a very similar trend as the 380 nm wavelength for the 500 nm wavelength. The summer season showed the highest turbidities of 0.13 for all three time periods. The lowest turbidities occurred during winter although the autumn season also had low turbidities. The winter season values were 0.08, 0.07, and 0.05 for 0900, 1200, and 1500 MST, respectively. The diurnal trend was not as significant for the 500 nm wavelength compared to the 380 nm wavelength. Over the annual period, little change in turbidity for morning to afternoon occurred. However, some individual months did show a trend toward highest values at 1200 MST.

Tables 26 and 27 show the daily trends for the four remaining channels. All four channels show the same diurnal pattern as the 380 nm wavelength with

predominantly higher turbidities at 1200 MST. However, with the 940 nm wavelength the pattern is not as definite with 0900 and 1500 MST turbidities resulting in highest values for certain months. The 940 nm wavelength recorded the highest turbidities of all six channels. The 940 nm wavelength again is the most affected by water vapor channel. The 880 nm channel is least affected by water vapor and had the lowest average turbidities.

Figures 8 and 9 show graphically the 1200 MST trend for each month for the six wavelengths measured. Figures 10 through 16 show the diurnal trend for each month from April, 1978 through October, 1978 for the six wavelengths.

## B. Diffuse Radiation

Measurements related to the diffuse radiation and direct beam solar radiation are summarized in Tables 28 through 34. The tables break the statistics into three wavelengths. These are 300 to 2800 nm, 300 to 700 nm, and 700 to 2800 nm. The 700 to 2800 nm band is the band most affected by water vapor absorption. The various statistics listed relate to the amount of diffuse or scattered radiation received versus that possible to receive provided no scattering of the solar radiation occurred.

Looking first at the diffuse sky irradiance for the 300 to 2800 nm wavelength, the values range from a low of 0.11 during November, 1977 to a high of 0.23 during June, 1977 and February, 1979. The trend appears to be toward greater diffuse radiation during the spring season and toward less diffuse radiation during the autumn and early winter seasons. Looking at the 300 to 700 nm wavelength the same general pattern is evident even though only a partial year of data is available. The 700 to 2800 nm wavelength also show a somewhat similar pattern although not as pronounced as the other wavelengths.

Probably the most important variable regarding air quality and visibility measurements is the extinction coefficient. The 300 to 2800 nm wavelength extinction coefficient show a similar pattern to that of the sun photometer turbidity measurements. Highest extinction coefficients are evident during the early summer or late spring while the lowest values occur during the late autumn to early winter. The extinction coefficients vary from a high of 1.04 in April, 1978 to a low of 0.35 in November, 1977. The 300 to 700 nm wavelength extinction coefficient shows the same pattern even though only a partial year of data is present. The coefficients vary from a high of 1.07 in August, 1978 to a low of 0.59 in January, 1979. The 700 to 2800 nm wavelength also follows this pattern with the highest coefficient of 0.55 occurring during during January, 1979.

Statistics regarding other solar radiation variables are also given in the tables. Noting only one of these, the fraction of the total solar radiation possible that is diffuse averages around 30 percent.

Figures 17 through 24 show the diurnal trends of the extinction coefficient for the three wavelength bands for the period August, 1978 through March, 1979. The pattern simply shows a peaking of the extinction coefficient near mid-day and dropping off again toward evening.

The various statistics and curves now available on the relative diffuse radiation and turbidity measurements establish a baseline of the relative visibility of the Poplar River area. Measurements of the parameters will be continued until the power plants start testing, at which time a final compilation of these measurements will be made for future comparisons with measurements made after the plants have been operating.



TABLE 25

Poplar River Atmospheric Turbidity Data (Volz Base e)  
 Daily Trends  
 April, 1977 - March, 1979

Month	Average 380 nm			Average 500 nm		
	0900	1200	1500 (MST)	0900	1200	1500 (MST)
January	0.07	0.10	0.06	0.06	0.06	0.04
February	0.11	0.16	0.10	0.08	0.10	0.07
March	0.16	0.11	0.14	0.10	0.13	0.10
April	0.21	0.22	0.21	0.16	0.16	0.16
May	0.29	0.35	0.28	0.15	0.18	0.17
June	0.29	0.32	0.27	0.15	0.15	0.14
July	0.24	0.29	0.27	0.12	0.13	0.13
August	0.23	0.26	0.23	0.11	0.12	0.12
September	0.19	0.22	0.17	0.10	0.11	0.09
October	0.14	0.19	0.18	0.08	0.11	0.11
November	0.06	0.09	0.05	0.03	0.06	0.03
December	0.13	0.09	0.06	0.09	0.05	0.04
Spring	0.22	0.23	0.21	0.14	0.16	0.14
Summer	0.25	0.29	0.26	0.13	0.13	0.13
Autumn	0.13	0.17	0.13	0.07	0.09	0.08
Winter	0.10	0.12	0.07	0.08	0.07	0.05
Annual	0.18	0.20	0.17	0.11	0.11	0.10

TABLE 26  
 Poplar River Atmospheric Turbidity Data (Volz Base e)  
 Daily Trends  
 May, 1978 - March, 1979

Month	Average 440 nm			Average 640 nm		
	0900	1200	1500 (MST)	0900	1200	1500 (MST)
May	0.26	0.28	0.25	0.09	0.09	0.09
June	0.23	0.26	0.22	0.07	0.07	0.07
July	0.19	0.23	0.22	0.05	0.06	0.07
August	0.16	0.20	0.18	0.04	0.04	0.04
September	0.19	0.19	0.15	0.05	0.08	0.06
October	0.11	0.16	—	0.04	0.06	—
November	0.16	—	0.11	0.04	—	0.03
December	0.09	0.17	0.11	0.03	0.02	0.04
January	0.13	0.21	—	0.06	0.04	—
February	0.19	0.39	—	0.08	0.12	—
March	0.30	0.39	0.25	0.08	0.08	0.05

TABLE 27  
 Poplar River Atmospheric Turbidity Data (Volz Base e)  
 Daily Trends  
 May, 1978 - March 1979

Month	Average 880 nm			Average 940 nm		
	0900	1200	1500 (MST)	0900	1200	1500 (MST)
May	0.07	0.07	0.07	0.33	0.35	0.29
June	0.06	0.07	0.06	0.39	0.42	0.43
July	0.04	0.05	0.06	0.42	0.47	0.52
August	0.04	0.04	0.05	0.35	0.36	0.39
September	0.06	0.07	0.05	0.45	0.39	0.33
October	0.03	0.05	—	0.15	0.17	—
November	0.03	—	0.04	0.12	—	0.05
December	0.02	0.02	0.02	0.05	0.06	0.08
January	0.05	0.03	—	0.13	0.12	—
February	0.04	0.09	—	0.08	0.10	—
March	0.06	0.07	0.04	0.16	0.15	0.20

# Poplar River Area Atmospheric Turbidity Trend Monthly 1200 MST Average

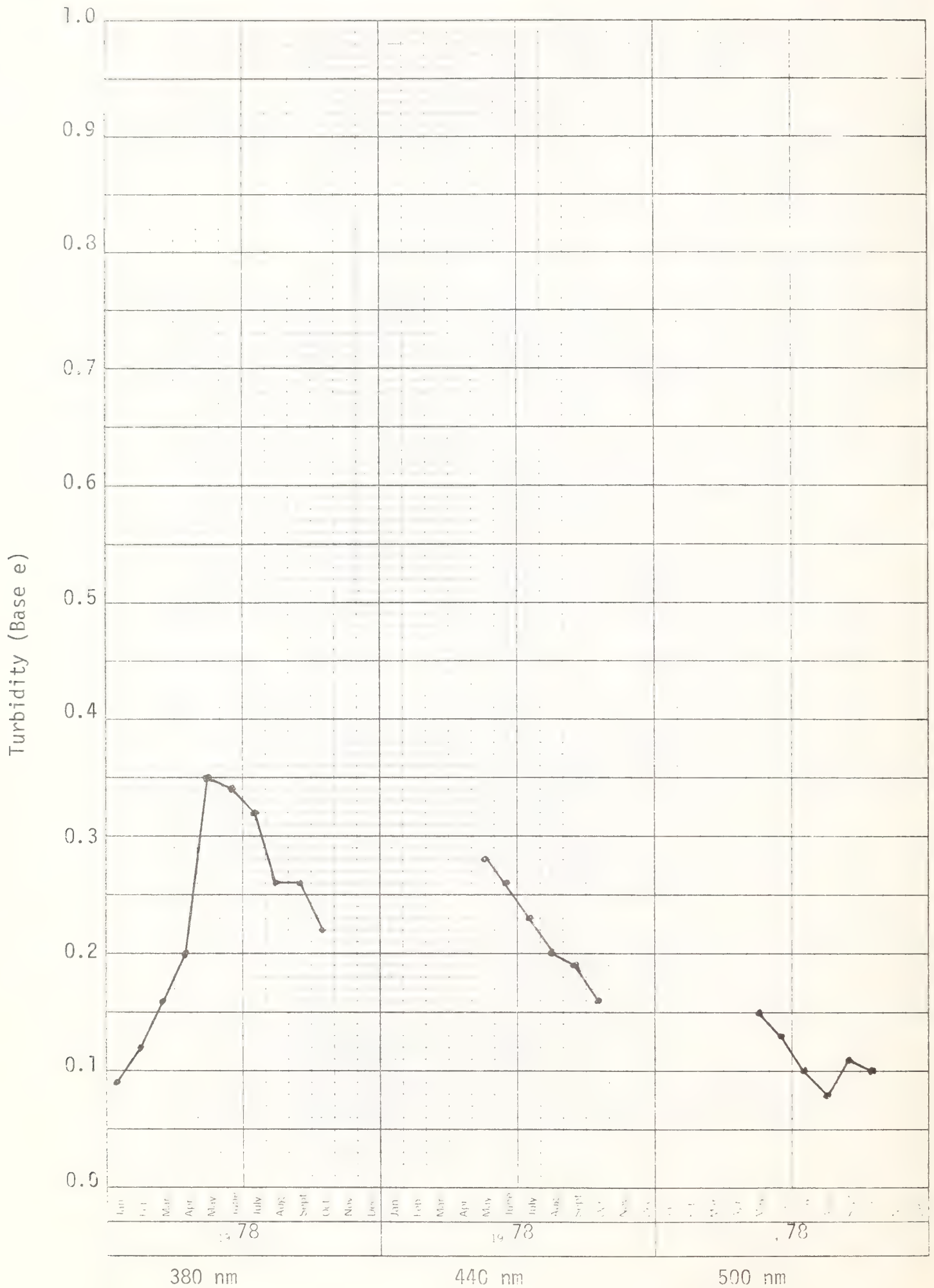




Figure 9  
 Poplar River Area Atmospheric Turbidity Trend  
 Monthly 1200 MST Average

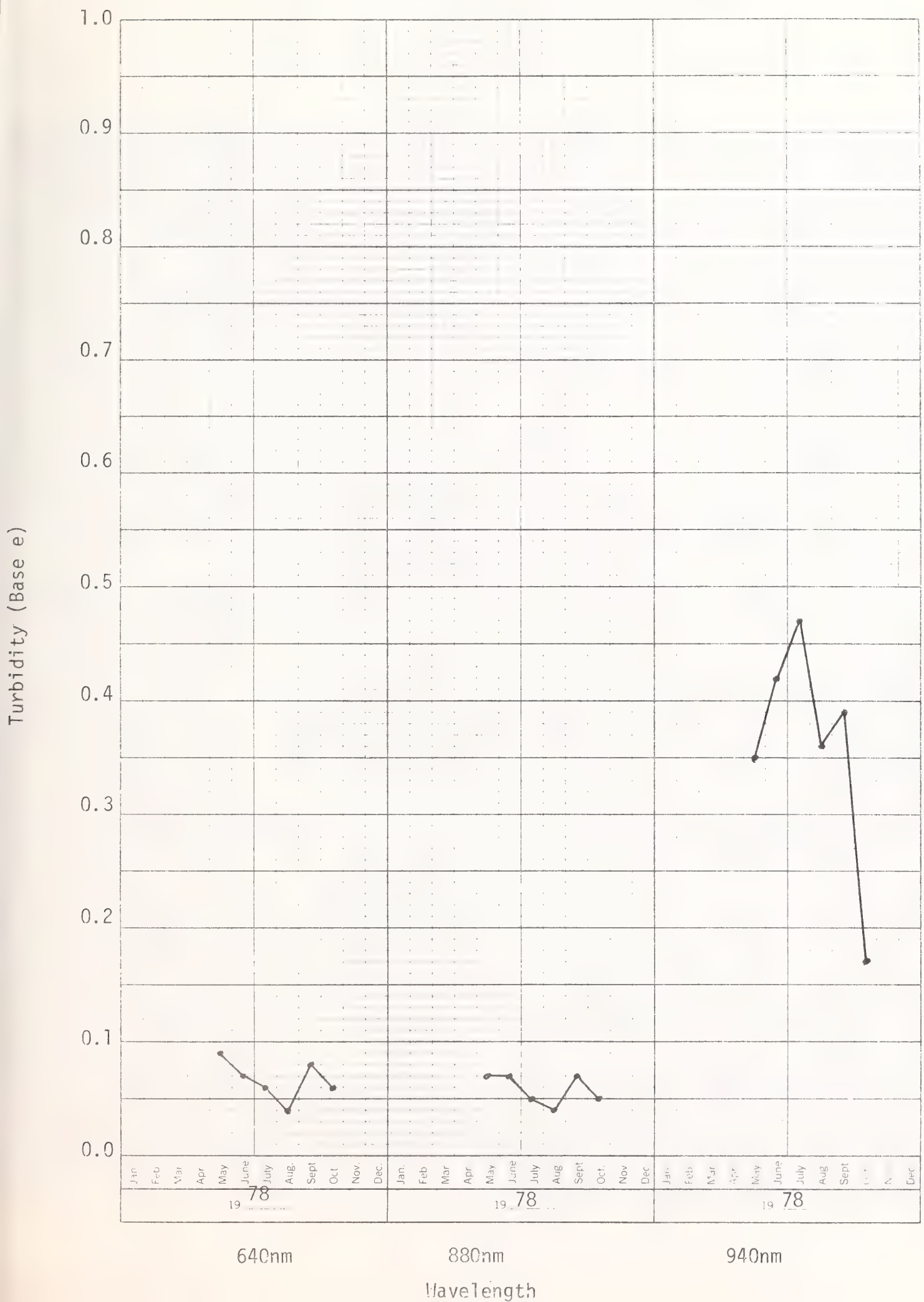


Figure 10

Poplar River Area Monthly Average Turbidity  
Versus Time of Day

April 1978

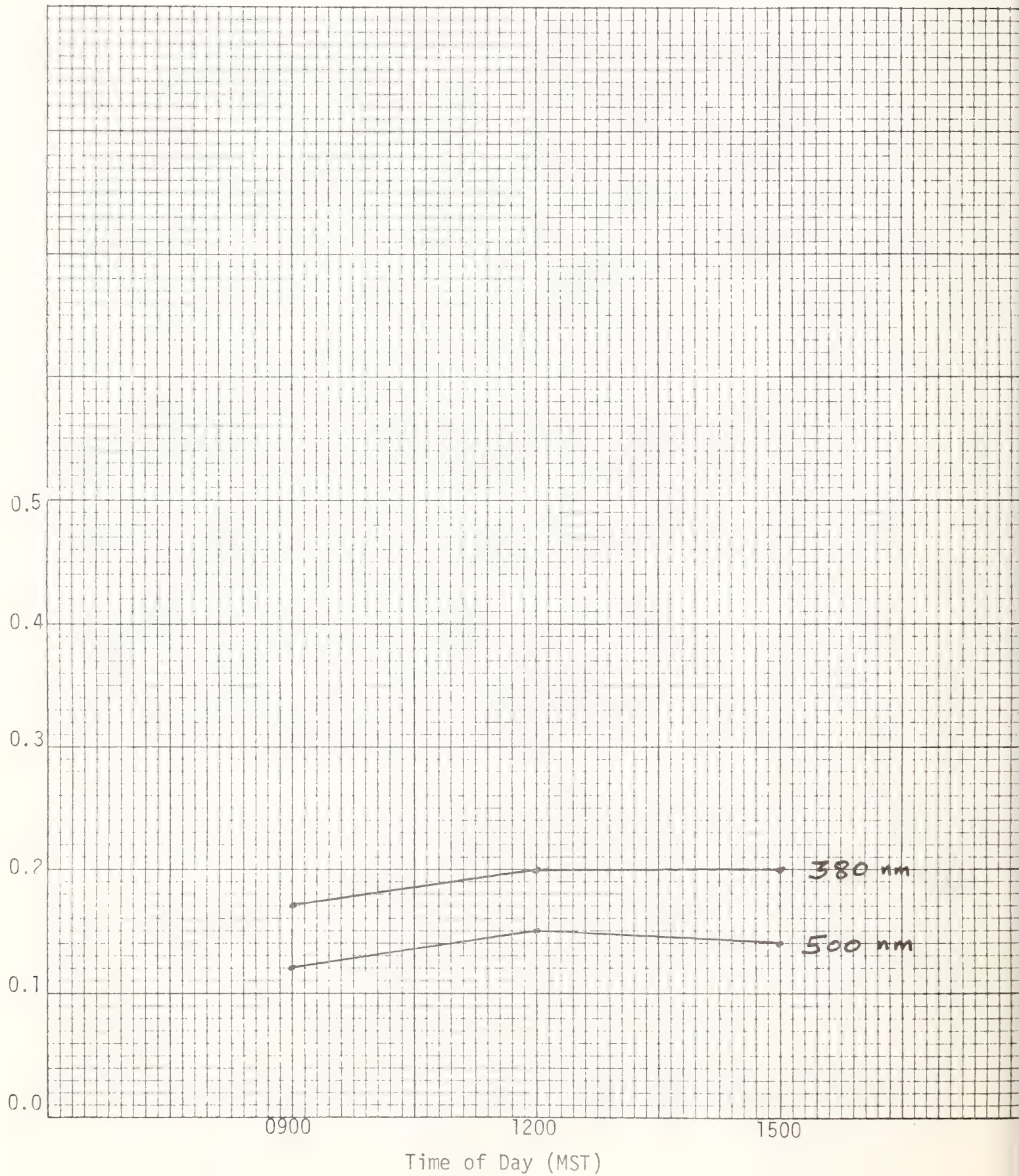


Figure 11

Poplar River Area Monthly Average Turbidity  
Versus Time of Day

May 1978

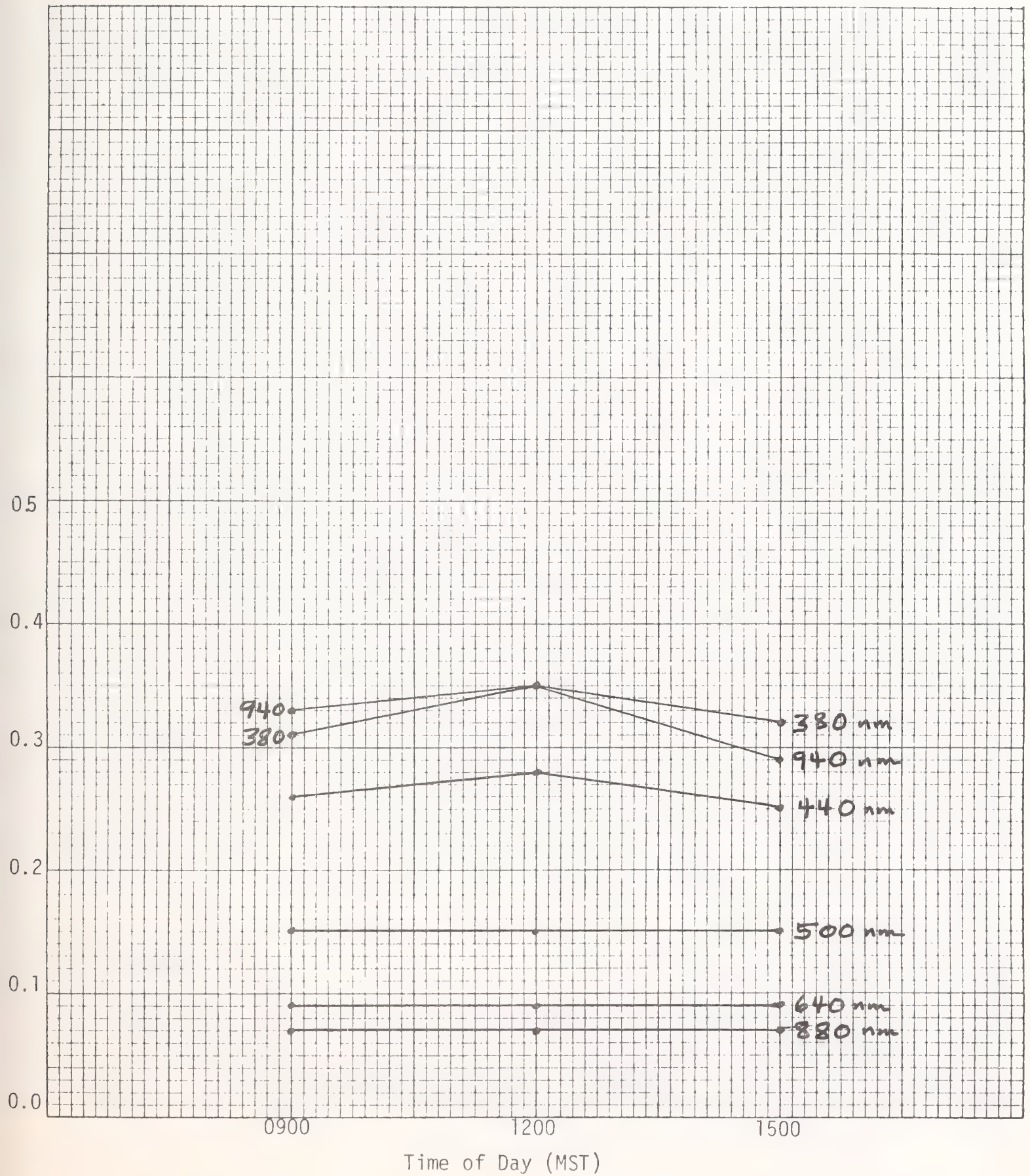




Figure 12  
Poplar River Area Monthly Average Turbidity  
Versus Time of Day

June 1978

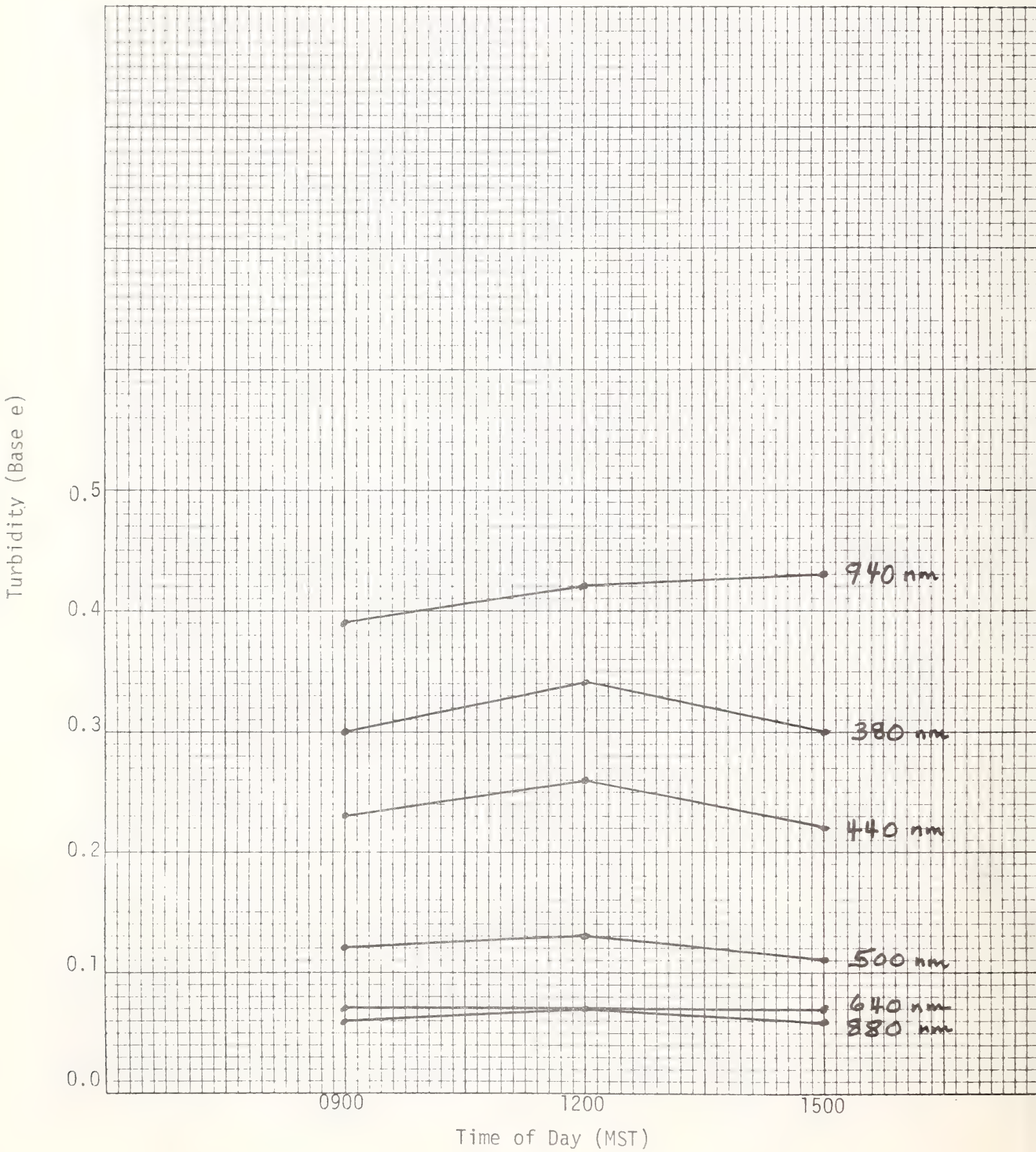




Figure 13  
Poplar River Area Monthly Average Turbidity  
Versus Time of Day  
July 1978

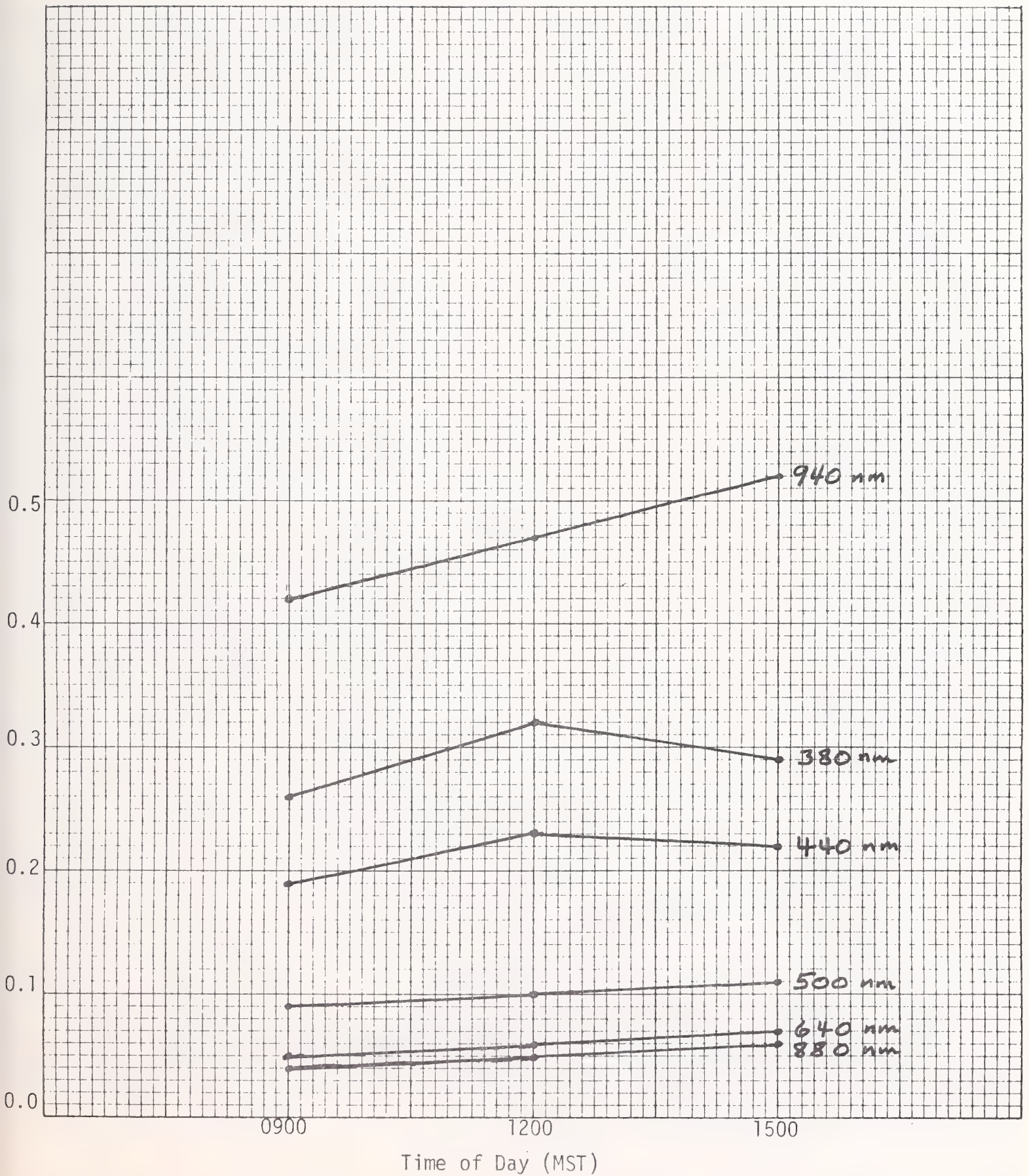


Figure 14  
Poplar River Area Monthly Average Turbidity  
Versus Time of Day  
August 1978

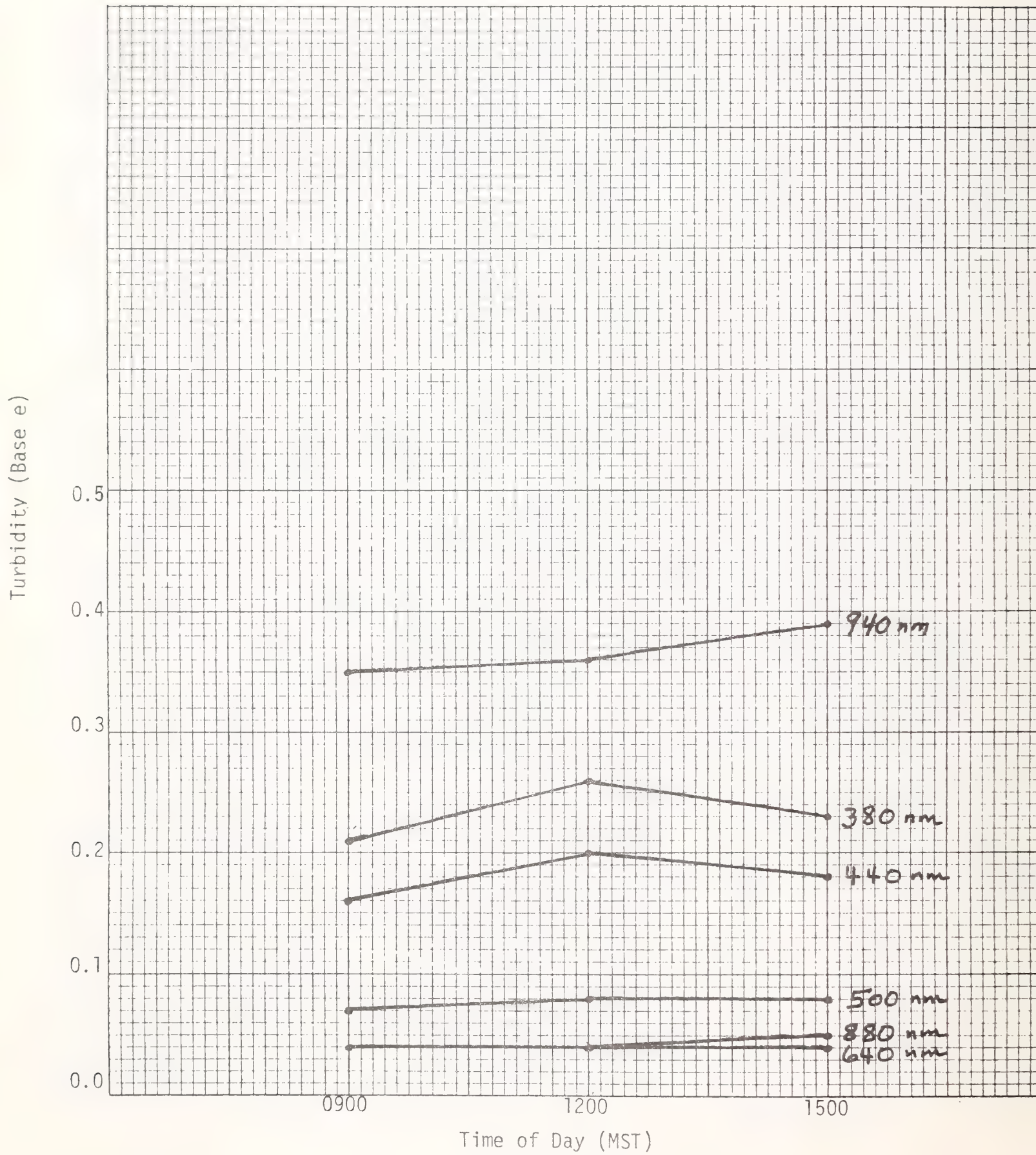




Figure 15  
Poplar River Area Monthly Average Turbidity  
Versus Time of Day  
September 1978

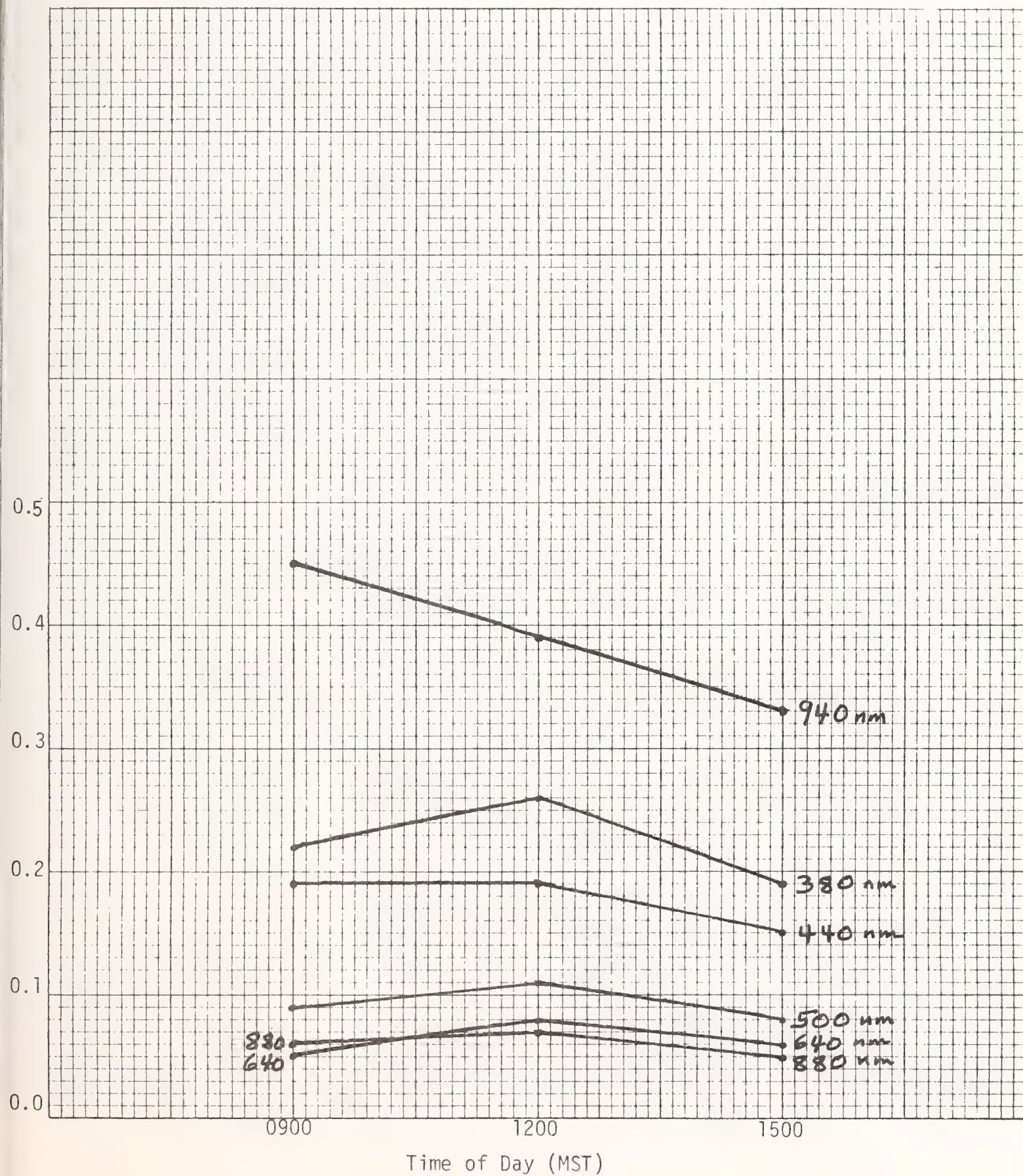


Figure 16  
Poplar River Area Monthly Average Turbidity  
Versus Time of Day  
October 1978

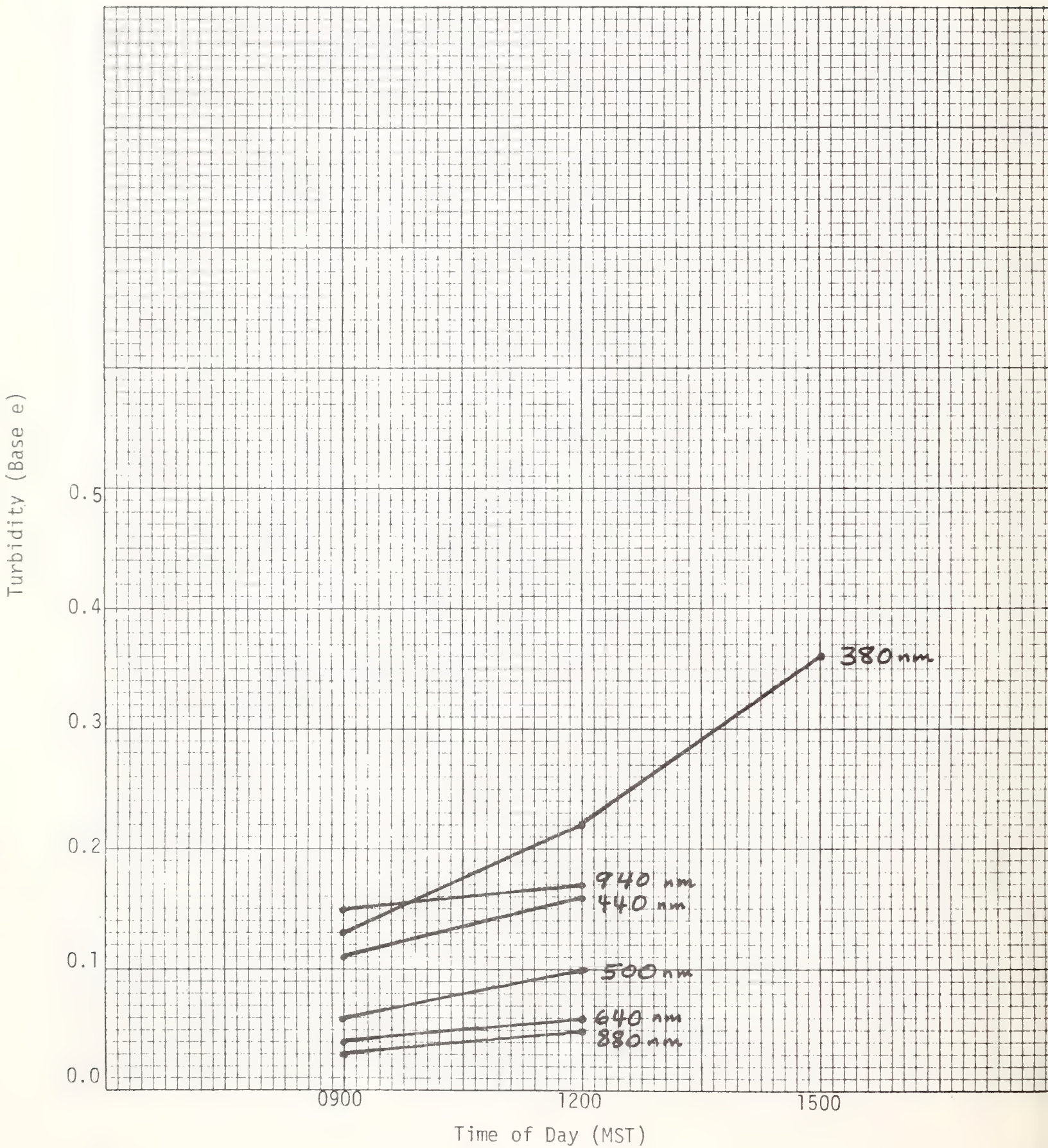




TABLE 28  
 Poplar River Area Summary of Solar Radiation\* - 1977  
 Wavelength 300 to 2800 nm

	Months											
	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Incident Solar Radiation	-	-	0.44	0.57	0.54	0.57	0.58	0.46	0.34	0.35	0.26	0.19
Normal Incident Direct Solar Radiation	-	-	0.51	0.62	0.48	0.50	0.60	0.56	0.33	0.54	0.53	0.19
Diffuse Sky Irradiance	-	-	0.19	0.21	0.22	0.23	0.19	0.19	0.16	0.13	0.11	0.14
Ratio of Diffuse to Total	-	-	0.60	0.50	0.59	0.56	0.48	0.49	0.67	0.55	0.57	0.81
Fractional Transmittance of Direct Solar Beam	-	-	0.32	0.36	0.29	0.30	0.33	0.33	0.28	0.34	0.37	0.20
Fractional Transmittance of Total Solar Radiation Possible	-	-	0.62	0.60	0.54	0.52	0.52	0.53	0.52	0.57	0.64	0.59
Fraction Diffuse Is of Total Possible Solar Radiation	-	-	0.30	0.24	0.25	0.22	0.19	0.21	0.25	0.24	0.27	0.39
Extinction Coefficient (Base e)	-	-	0.64	0.68	0.94	0.96	0.86	0.86	0.83	0.53	0.35	0.59

\*Monthly average values taken at Scobey Border Station

TABLE 29

Poplar River Area Summary of Solar Radiation\* - 1978  
Wavelength 300 to 2800 nm

	Months											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Incident Solar Radiation	0.25	0.35	0.44	0.37	0.47	0.23	0.57	0.55	0.47	0.38	0.25	0.23
Normal Incident Direct Solar Radiation	0.45	0.36	0.46	0.32	0.45	0.33	0.64	0.69	0.63	0.55	0.31	0.33
Diffuse Sky Irradiance	0.13	0.22	0.22	0.20	0.18	0.15	0.17	0.16	0.16	0.16	0.16	0.15
Ratio of Diffuse to Total	0.65	0.72	0.63	0.70	0.59	0.77	0.41	0.39	0.43	0.52	0.71	0.77
Fractional Transmittance of Direct Solar Beam	0.36	0.28	0.31	0.28	0.31	0.27	0.36	0.38	0.48	0.38	0.27	0.27
Fractional Transmittance of Total Solar Radiation Possible	0.68	0.66	0.61	0.52	0.51	0.72	0.51	0.55	0.69	0.67	0.69	0.72
Fraction Diffuse Is of Total Possible Solar Radiation	0.33	0.38	0.30	0.24	0.20	0.45	0.16	0.17	0.22	0.30	0.42	0.45
Extinction Coefficient (Base e)	0.41	0.66	0.70	1.04	0.90	0.48	0.67	0.63	0.38	0.47	0.51	0.48

\*Monthly average values taken at Scobey Border Station

TABLE 30

Poplar River Area Summary of Solar Radiation\* - 1979  
Wavelength 300 to 2800 nm

	Months											
	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Incident Solar Radiation	0.27	0.36	0.44									
Normal Incident Direct Solar Radiation	0.39	0.35	0.42									
Diffuse Sky Irradiance	0.17	0.23	0.22									
Ratio of Diffuse to Total	0.74	0.75	0.71									
Fractional Transmittance of Direct Solar Beam	0.28	0.32	0.38									
Fractional Transmittance of Total Solar Radiation Possible	0.77	0.76	0.72									
Fraction Diffuse Is of Total Possible Solar Radiation	0.49	0.46	0.34									
Extinction Coefficient (Base e)	0.47	0.55	0.60									

\* Monthly Average values taken at Scobey Border Station

TABLE 31

Poplar River Area Summary of Solar Radiation\* - 1978  
Wavelength 300 to 700 nm

	Months											
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Incident Solar Radiation	-	-	-	-	-	-	-	0.27	0.25	0.20	0.13	0.12
Normal Incident Direct Solar Radiation	-	-	-	-	-	-	-	0.31	0.33	0.29	0.17	0.18
Diffuse Sky Irradiance	-	-	-	-	-	-	-	0.10	0.09	0.09	0.08	0.08
Ratio of Diffuse to Total	-	-	-	-	-	-	-	0.48	0.43	0.55	0.70	0.77
Fractional Transmittance of Direct Solar Beam	-	-	-	-	-	-	-	0.18	0.24	0.19	0.15	0.15
Fractional Transmittance of Total Solar Radiation Possible	-	-	-	-	-	-	-	0.28	0.36	0.37	0.36	0.41
Fraction Diffuse Is of Total Possible Solar Radiation	-	-	-	-	-	-	-	0.10	0.13	0.18	0.22	0.23
Extinction Coefficient (Base e)	-	-	-	-	-	-	-	1.07	0.71	0.73	0.68	0.61

\*Monthly Average values taken at Scobey Border Station



TABLE 32

Poplar River Area Summary of Solar Radiation\* - 1979  
Wavelength 300 to 700 nm

	Months											
	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Incident Solar Radiation	0.14	0.19	0.23									
Normal Incident Direct Solar Radiation	0.18	0.19	0.21									
Diffuse Sky Irradiance	0.08	0.12	0.14									
Ratio of Diffuse to Total	0.76	0.75	0.72									
Fractional Transmittance of Direct Solar Beam	0.15	0.17	0.16									
Fractional Transmittance of Total Solar Radiation Possible	0.41	0.41	0.37									
Fraction Diffuse Is of Total Possible Solar Radiation	0.26	0.24	0.21									
Extinction Coefficient (Base e)	0.59	0.77	1.05									

\*Monthly average values taken at Scobey Border station

TABLE 33

## Poplar River Area Summary of Solar Radiation \* - 1978

Wavelength 700 to 2800 nm

Months

	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Incident Solar Radiation	-	-	-	-	-	-	-	0.26	0.22	0.17	0.12	0.10
Normal Incident Direct Solar Radiation	-	-	-	-	-	-	-	0.30	0.33	0.27	0.15	0.15
Diffuse Sky Irradiance	-	-	-	-	-	-	-	0.09	0.07	0.07	0.08	0.07
Ratio of Diffuse to Total	-	-	-	-	-	-	-	0.47	0.41	0.48	0.70	0.69
Fractional Transmittance of Direct Solar Beam	-	-	-	-	-	-	-	0.18	0.26	0.20	0.15	0.15
Fractional Transmittance of Total Solar Radiation Possible	-	-	-	-	-	-	-	0.27	0.33	0.31	0.34	0.34
Fraction Diffuse Is of Total Possible Solar Radiation	-	-	-	-	-	-	-	0.09	0.08	0.12	0.20	0.20
Extinction Coefficient (Base e)	-	-	-	-	-	-	-	1.08	0.67	0.68	0.71	0.57

\*Monthly average values taken at Scobey Border Station

Poplar River Area Summary of Solar Radiation\* - 1979  
Wavelength 700 to 2800 nm

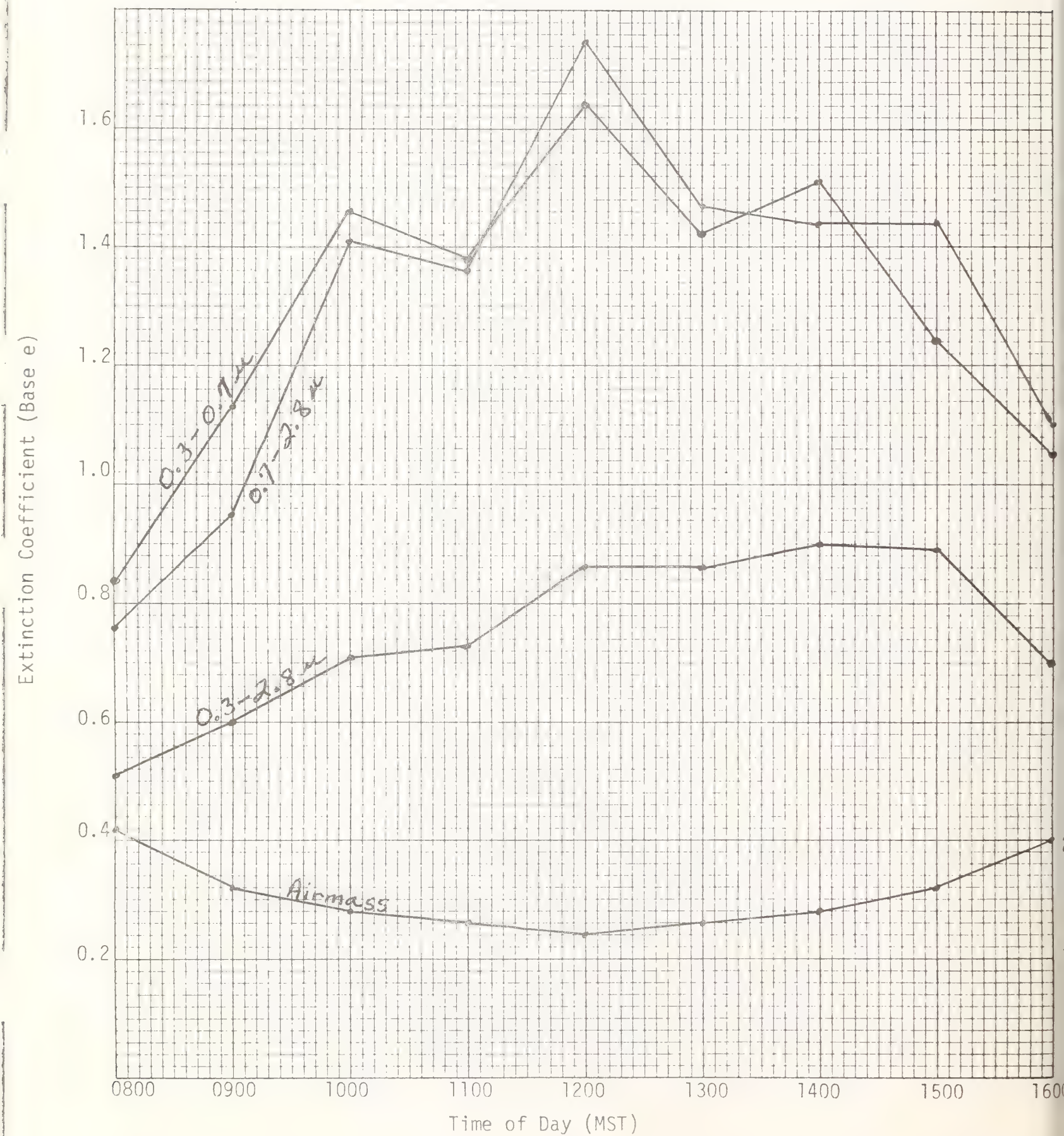
	Months											
	Jan.	Feb.	Mar	Apr	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.
Incident Solar Radiation	0.13	0.17	0.21									
Normal Incident Direct Solar Radiation	0.20	0.16	0.21									
Diffuse Sky Irradiance	0.08	0.12	0.10									
Ratio of Diffuse to Total	0.62	0.71	0.64									
Fractional Transmittance of Direct Solar Beam	0.19	0.16	0.21									
Fractional Transmittance of Total Solar Radiation Possible	0.45	0.36	0.35									
Fraction Diffuse Is of Total Possible Solar Radiation	0.27	0.21	0.14									
Extinction Coefficient (Base e)	0.55	0.77	0.78									

\*Monthly average values taken at Scobey Border Station

Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

August 1978

Figure 17

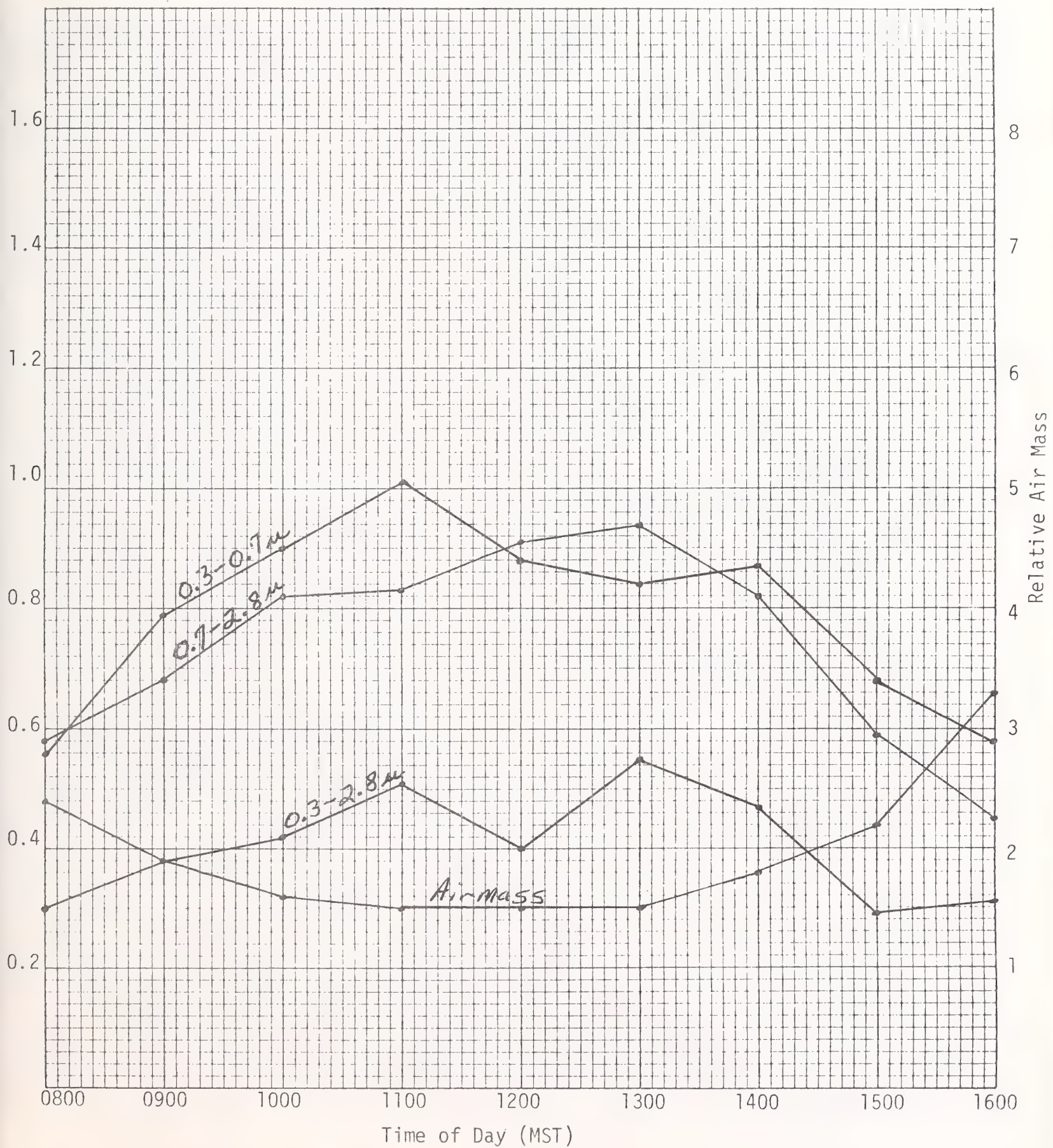




Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

September 1978

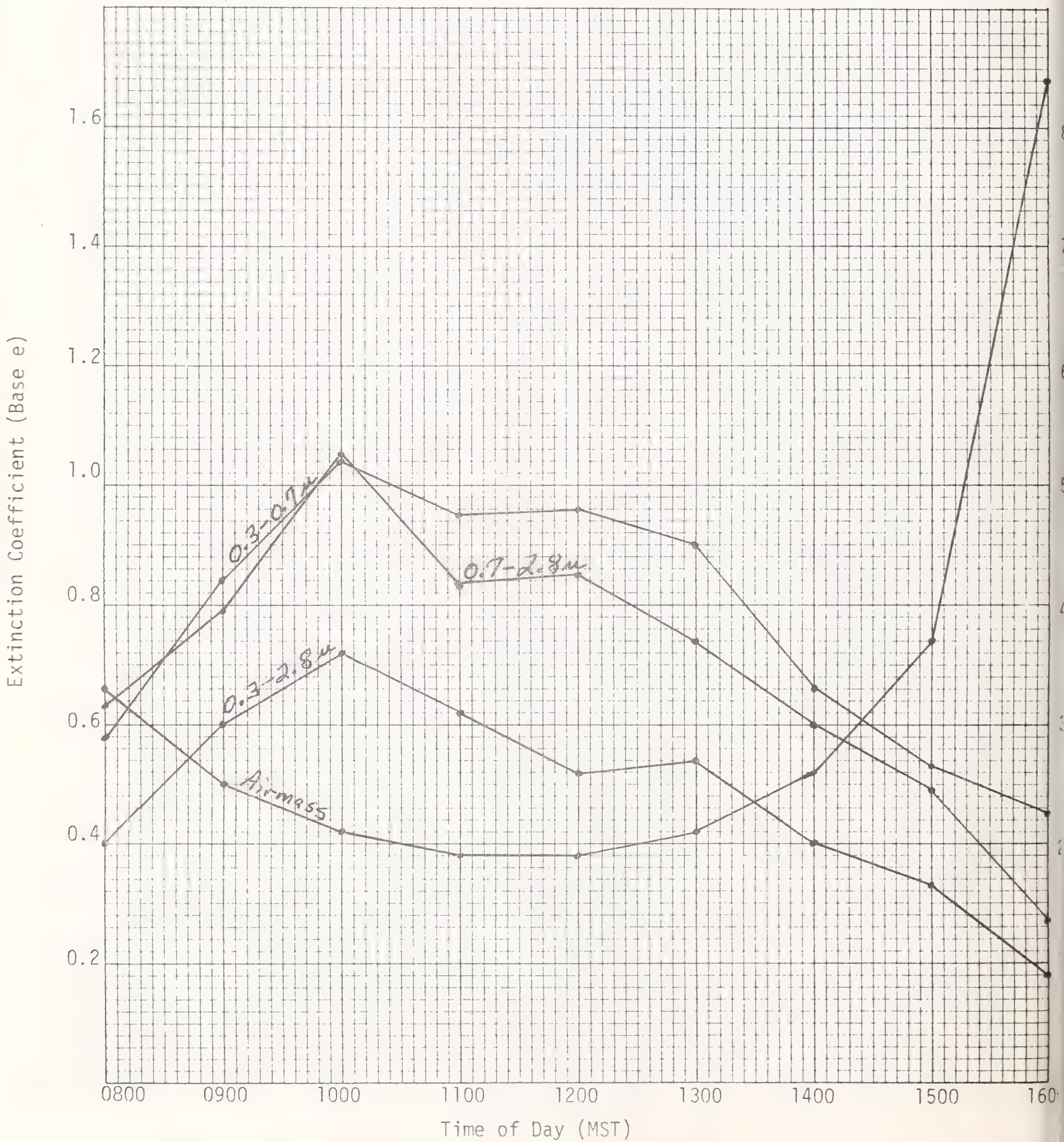
Figure 18



Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

October 1978

Figure 19

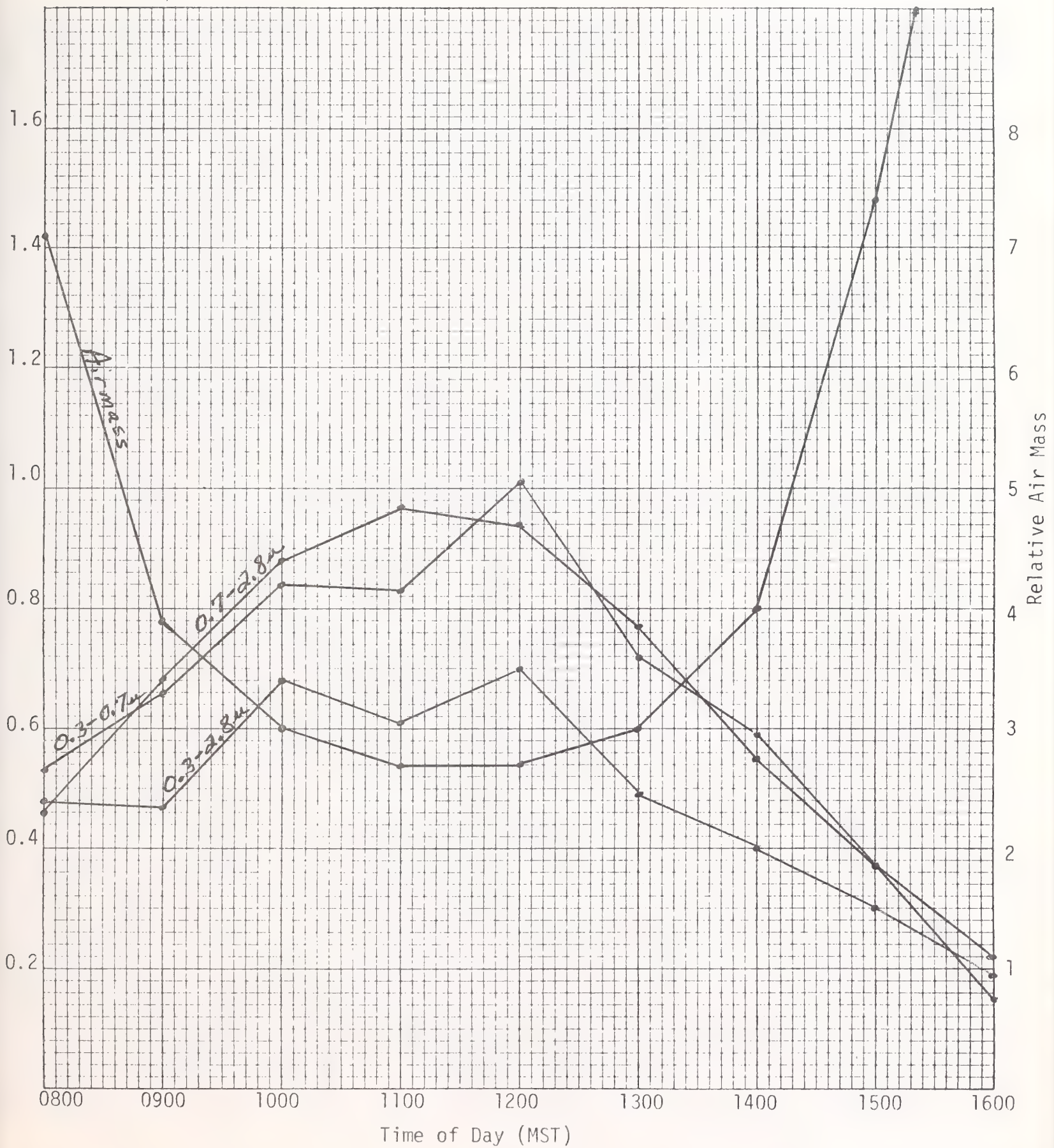




Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

November 1978

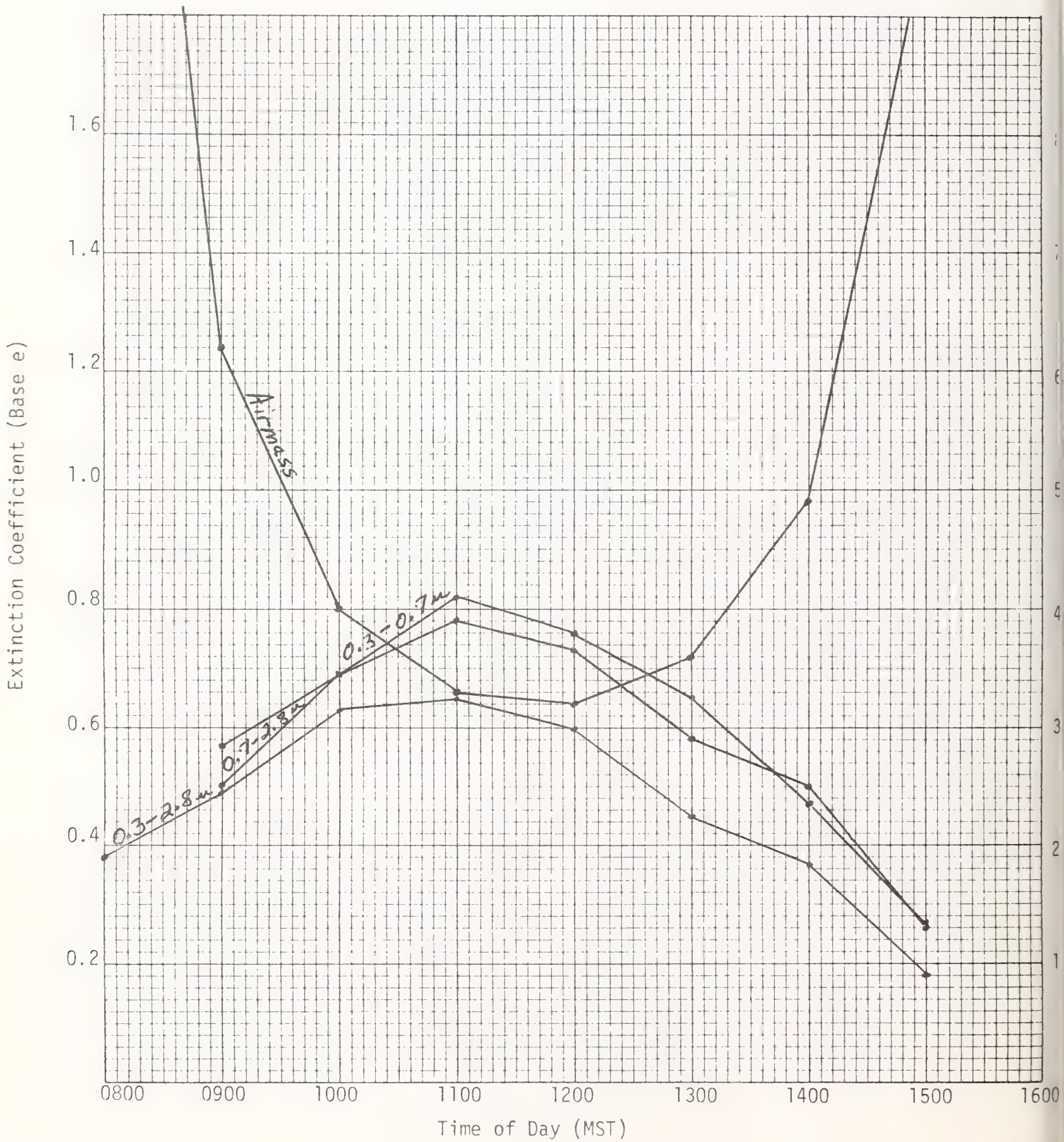
Figure 20



Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

December 1978

Figure 21





Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

January 1979

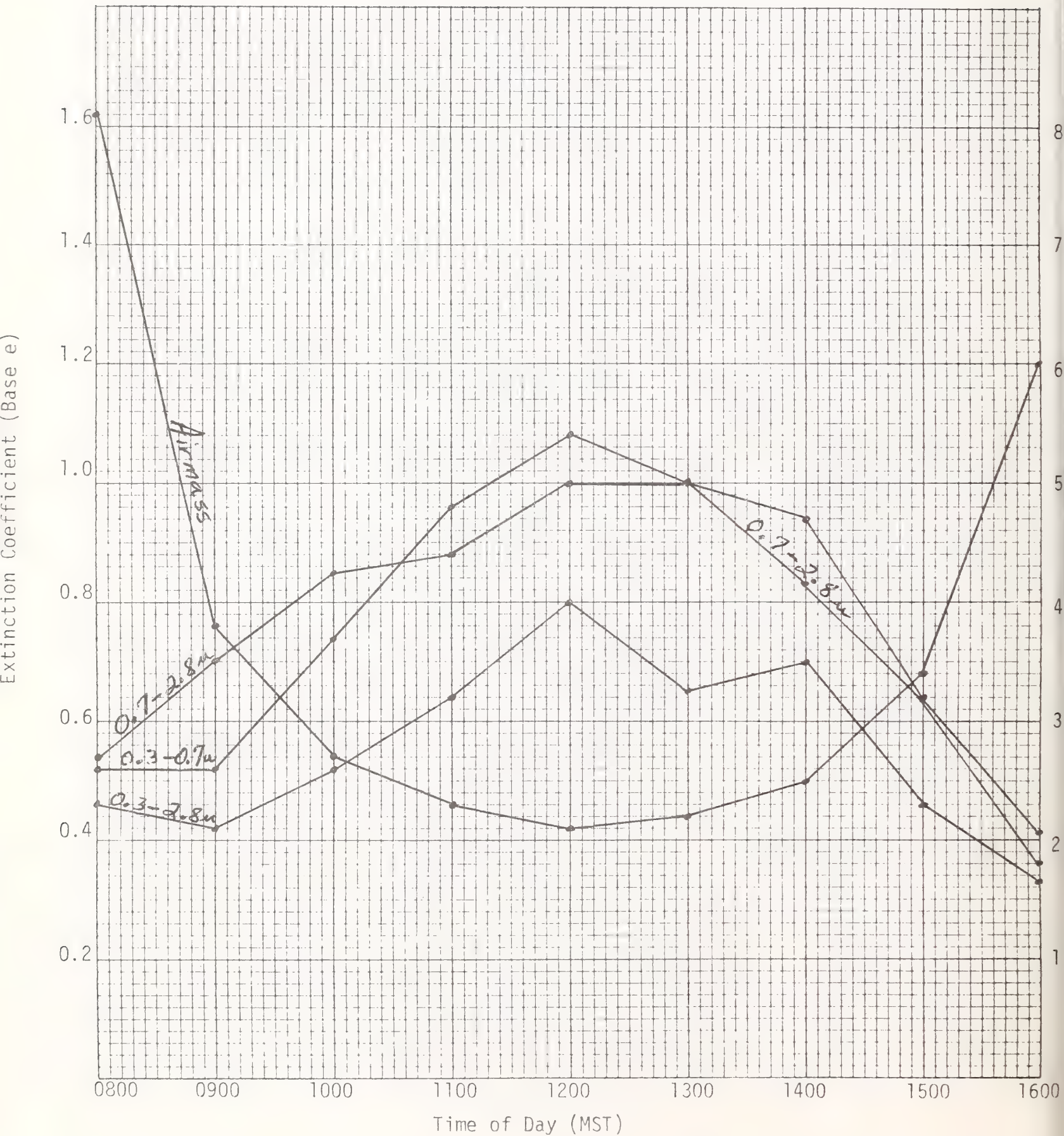
Figure 22



Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

February 1979

Figure 23

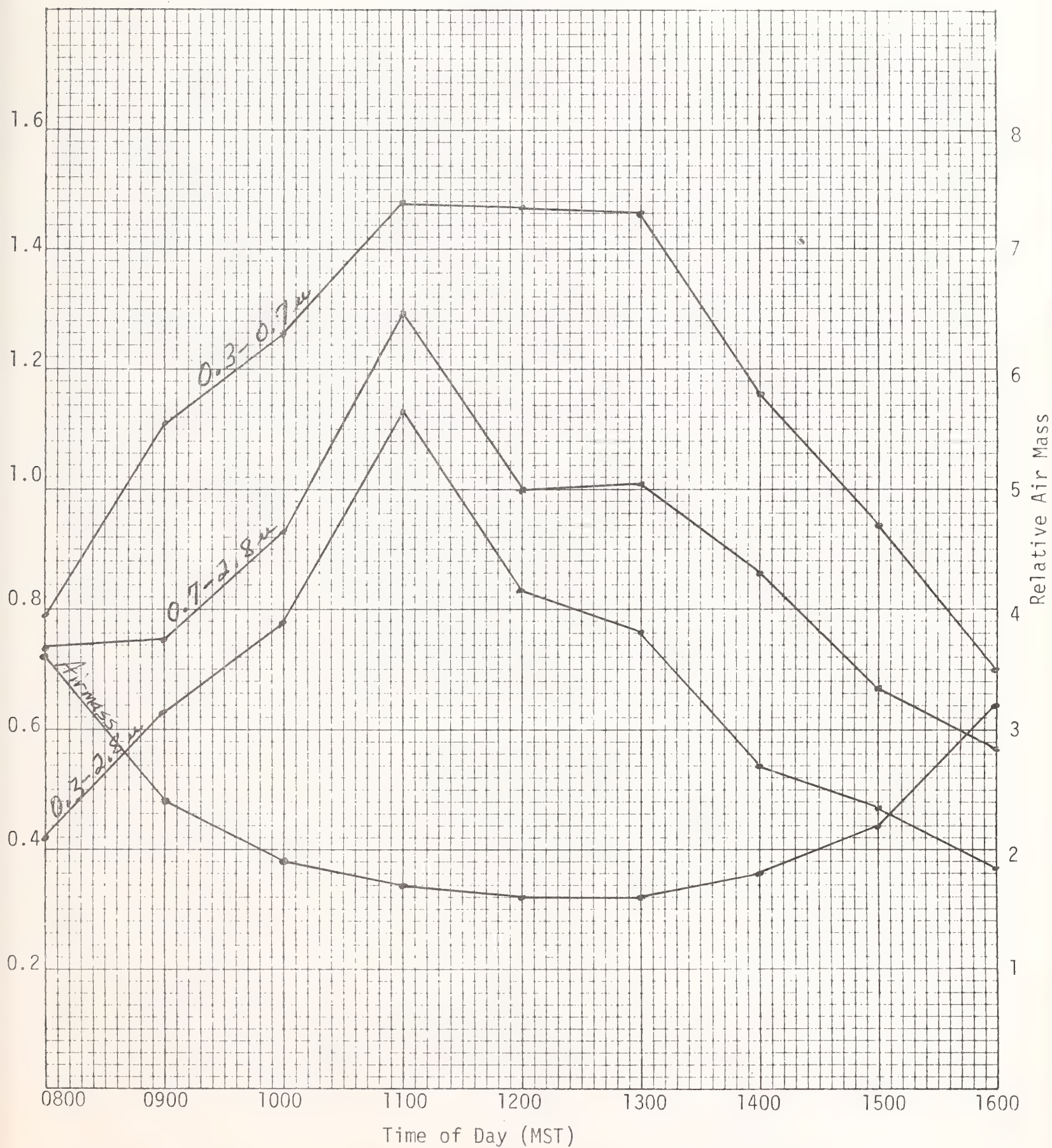




Poplar River Area Monthly Average Extinction  
Coefficient Versus Time of Day

March 1979

Figure 24



## V. SUMMARY

Two years of background air quality data for the Poplar River area are now in hand. Monitoring will be continued for background conditions until the first power plant starts operation late in 1979 or early 1980. At that time, monitoring to determine any change in the air quality parameters will be initiated. A final report covering the entire background monitoring period is anticipated to be published early in 1980. Additional reports assessing the impact of the power plants on the air quality or visibility will probably be published after the power plants have been operating for one year or more.

This report summarizes the air quality, visibility, and meteorology of the Poplar River area for the two years of monitoring activity. A variety of monitoring methods have been used to develop the ability to distinguish any impact caused by the power plant emissions on the air quality of the area from that of meteorological effects.



## REFERENCES

American Ephemeris and Nautical Almanac, 1977, 1978 and 1979.

Elterman, L., 1968: UV, Visible and IR Attenuation for Altitudes to 50 km. Air Force Cambridge Research Laboratories, Bedford, MA.

Gelhaus, J.W. et al., 1978: Background Air Quality Studies of the Poplar River Area of Northeastern Montana - 1977. Air Quality Bureau, Montana Department of Health and Environmental Sciences, Helena, Montana.

Gelhaus, J.W. and M.D. Roach, ed., 1979a: Issue Paper by the Scientific and Engineering Panel on Poplar River Air Quality. Air Quality Bureau, Montana Department of Health and Environmental Sciences, Helena, Montana.

Gelhaus, J.W. et al., 1979b: Montana Air Resources Modeling System. Air Quality Bureau, Montana Department of Health and Environmental Sciences, Helena, Montana.

Hullstrom, R.L.; 1977: Draft - A Study of Horizontal Visibility and Vertical Atmospheric Optical Properties at Stanton, North Dakota April 1976 - January 1977. Martin Marietta Corp., Denver, Colorado.

Mahn, W.C. et al., 1977: The Effects of Water Vapor, Ozone and Aerosol on Atmospheric Turbidity. J. Appl. Meteor., 16.

Volz, F.E., 1959. Arch. Meteorol. Geophys., Bioklimatol, B 10,100.

World Almanac, 1977.

## APPENDIX A

# Calculation of Solar Ephemerides For Solar Radiation Study

Prepared by Mike Machler

The following is a method of calculating the sun's declination and distance from the earth (or radius vector), plus the equation of time. Some simplifying assumptions have been made, but the errors resulting should be at least an order of magnitude smaller than the calculated values.

Definitions of certain terms used in the discussion are:

**Julian Day Number:** the number of days that have elapsed, at Greenwich noon on the day designated, since Greenwich noon on January 1, 4713 B.C. The Julian Date (J.D.) corresponding to any instant, is the Julian Day number followed by the fraction of the day elapsed since the preceding noon.

**Ephemeris Time (E.T.):** the independent time-argument of the ephemerides of the sun, moon, and planets. E.T. is theoretically uniform, since the length of the ephemeris second is fixed by definition.

**Sidereal Time:** the hour angle of the vernal equinox; directly related to the rotation of the earth; equal intervals of angular motion correspond to equal intervals of sidereal time.

**Universal Time (U.T.):** the precise measure of time used as the basis for all civil time-keeping. It is strictly related to sidereal time by equation 1), section II of this discussion.

In practice, E.T. and U.T. are nearly the same, and can be used interchangeably for most purposes.

In equations involving  $d$  and  $D$ , care must be exercised when adding the terms of the equation. For example:

To calculate  $L$  from equation 2), section I, for March 7, 1960 at 0<sup>h</sup> E.T.

J.D. at 0 <sup>h</sup> on March 7, 1960	2437000.5
J.D. at epoch of tables	2415020.0
Interval in days, $d$	<u>21980.5</u>

$$T = \frac{d}{36525} = 0.6017933$$

$$L = 279^{\circ}69'66.8'' + 21,664^{\circ}.5284 + 0^{\circ}.0001$$

Divide middle term by 360<sup>0</sup>:

$$\frac{21,664.5284}{360} = 60.1792$$

Take fractional part of above number and multiply by 360:

$$.1792 \times 360 = 64^{\circ}5284$$

$$L = 270^{\circ}69668 + 64^{\circ}5284 + 0^{\circ}0001 = 344^{\circ}2252$$

In equation 1), section II, the AST must always be less than 24 hours; if it is greater, subtract 24 hours. In equations 2), 3), 5), 7), 8), and 9) of section I, the answers must always be less than 360°; if they are not, subtract 360°.

# I. Declination of Sun and Radius Vector

$$1) \quad d = (\text{J.D. at time of observation}) - (\text{J.D. at epoch of tables})$$

where J.D. = Julian Date

$$\text{J.D. (at epoch of tables)} = 2,415,020.0$$

Geometric Mean Longitude, of sun mean equinox of date, L:

$$2) \quad L = 279^{\circ}696678 + 0^{\circ}9856473354d + 0^{\circ}00002267D^2$$

$$\text{where } D = \frac{d}{10000}$$

Geometric Mean Longitude of sun, mean equinox of beginning of year,  $L_0$ :

$$3) \quad L_0 = L - p\tau$$

$$\text{where } p = 50''.2564 + 0''.0222T$$

$$\tau = \frac{\text{J.D. (time of observation)} - \text{J.D. (Beginning of year)}}{365.24219878 - 0.00000614T}$$

$$T = \frac{d}{36525}$$

Mean obliquity of the ecliptic,  $\epsilon_M$ :

$$4) \quad \epsilon_M = 23^{\circ}452294 - 0^{\circ}0130125T - 0^{\circ}00000164T^2 + 0^{\circ}000000503T^3 = \epsilon_T$$

Let  $\epsilon_M = \epsilon_T$ , the true obliquity of the ecliptic. This ignores the term  $\Delta\epsilon$ , the nutation in obliquity, which is always less than about 9" of arc. The correct equation is  $\epsilon_T = \epsilon_M - \Delta\epsilon$ .

Apparent longitude of sun,  $\lambda_A$ :

$$5) \quad \lambda_A = L_0 - p\tau - \frac{20''.47}{R}$$

where R is the radius vector. This equation ignores the nutation in longitude,  $\Delta\psi$ , which is smaller than 9.2".

Radius vector, R, (same as s - factor):

$$6) \quad R = a (1 - \text{ecos}E)$$

where

a = semi-major axis of earth's orbit = 1.00000023 A.U.

e = eccentricity of earth's orbit



$$e = 0.01675104 - 0.00004180T - 0.000000126T^2$$

E = eccentric anomaly

The eccentric anomaly, E, is calculated from Kepler's Equation:

$$7) \quad E - e \sin E = M$$

where M = mean anomaly = L -  $\Gamma$

$$= 358^{\circ}47'58.33'' + 0^{\circ}98'56.002670d - 0^{\circ}00'00.1120d^2 - 0^{\circ}00'00.000070d^3$$

To solve for E, let  $E_0 = M$  be the initial guess of the solution and  $E_0 + \Delta E_0$  be the true solution.

Calculate

$$M_0 = E_0 - e \sin E_0$$

and then

$$\Delta E_0 = \frac{M - M_0}{1 - e \cos E_0}$$

Find  $E_0 + \Delta E_0$  and then repeat the process using  $E_0 = \Delta E_0$  as the new guess. Continue until  $|E_n - E_{n-1}| \leq k$ ,

where  $k = 1''$ .

Note: all angles in the above calculations must be in radians.

Apparent declination of sun,  $\delta_A$ :

$$8) \quad \delta_A = \sin^{-1} \left[ \sin \lambda_A \sin e_T + 44.48 \beta'' \times 10^{-7} \right]$$

The second term in brackets may be neglected, since it is normally on the order of  $3.0 \times 10^{-6}$ , leaving:

$$9) \quad \delta_A = \sin^{-1} \left[ \sin \lambda_A \sin e_T \right]$$

## II. Equation of Time

Apparent sidereal time at 0<sup>h</sup> U.T., AST:

$$1) \quad \text{AST} = R_u + 12^h$$

$$\text{where } R_u = 18^h 38^m 45^s.836 + 8640184^s.542T + 0^s.0929T^2$$

This equation neglects the equation of the equinoxes ( $\Delta \psi \cos \epsilon$ ), which is usually less than one second.

Apparent right ascension of the sun at 0<sup>h</sup> E.T.  $\alpha_A$ :

$$2) \quad \cos \alpha_A = \frac{\cos \lambda_A}{\cos \delta_A}$$

$\lambda_A$  is calculated using equation 5), section I, and  $\delta_A$  is calculated from equation 9), section I.

$\alpha_A$  must be expressed in hours, minutes, and seconds. To do this, add  $360^\circ$  to  $\alpha_a$  if it is negative; subtract  $360^\circ$  if it is greater than  $360^\circ$  and then divide by  $15^\circ$ . This gives a value in decimal hours, which can then be converted to hours, minutes, and seconds.

Equation of time,  $E_T$ :

$$3) \quad E_T = (12h + \text{AST at } 0^h \text{ U.T.}) - (\alpha_A \text{ at } 0^h \text{ E.T.})$$

---

W.M. Smart, Textbook on Spherical Astronomy, Sixth Edition. Cambridge Univ. Press, 1977.

Explanatory Supplement to the Astronomical Ephemeris and the American Ephemeris and Nautical Almanac. London: Her Majesty's Stationery Office 1961.

## APPENDIX B





## Scobey Border Station Site



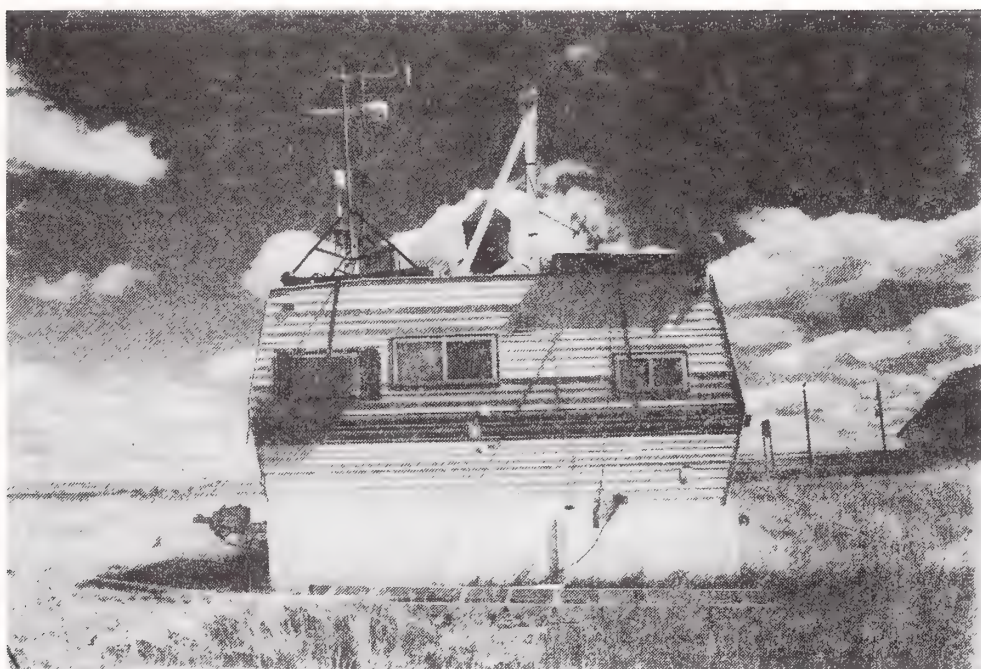
View from southeast



View from east



## Scobey Border Station Site



View from west



View from north





## Engberg Site



View from south



View from west



## Engberg Site



View from east



View from north





Richardson Site



View from east



View from west



## Richardson Site



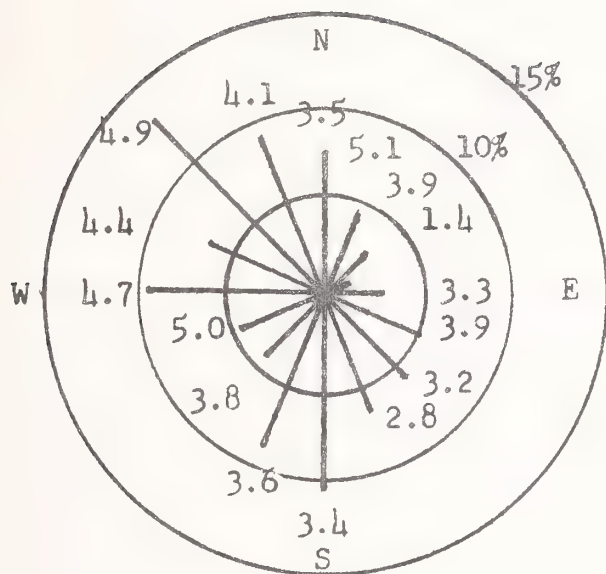
View from north



View from south

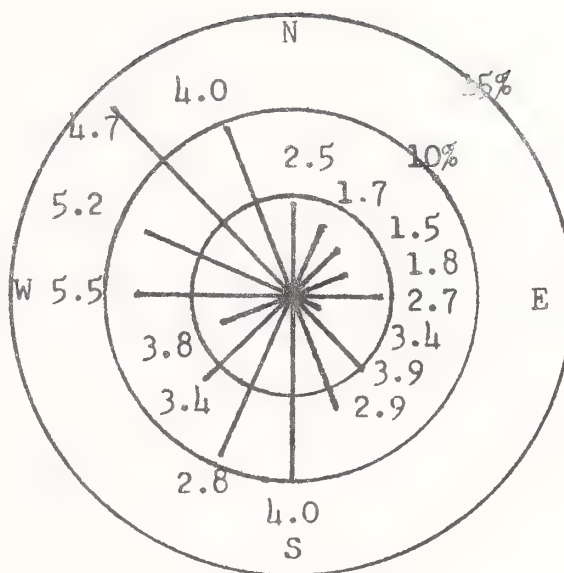






March 1977

Calm 1.0%



April 1977

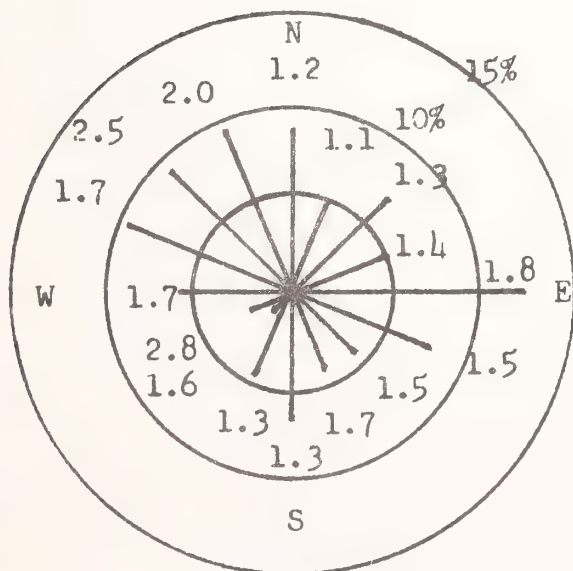
Calm 1.8%

### MONTHLY WIND ROSES

#### SCOBEY BORDER STATION, MONTANA

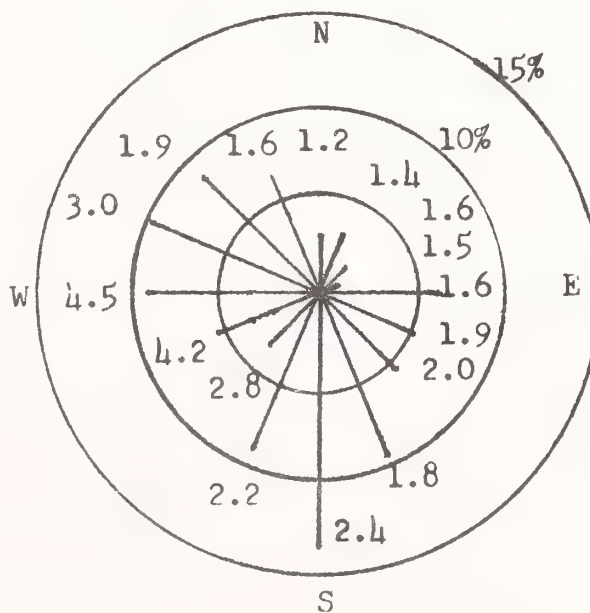
September 1977

Calm 1.7%

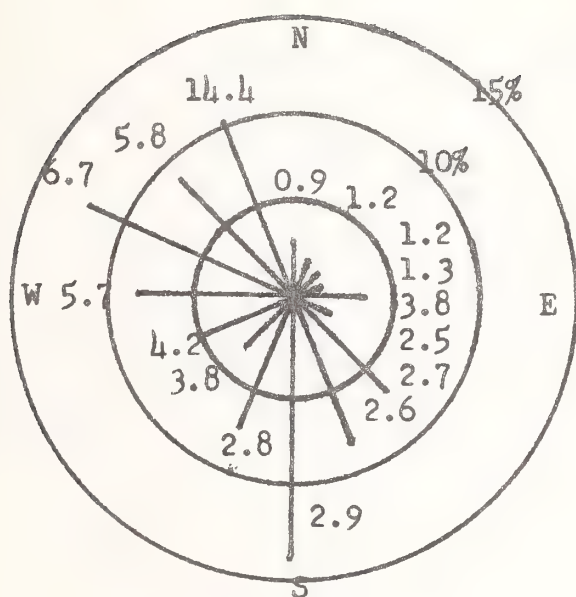


October 1977

Calm 3.1%

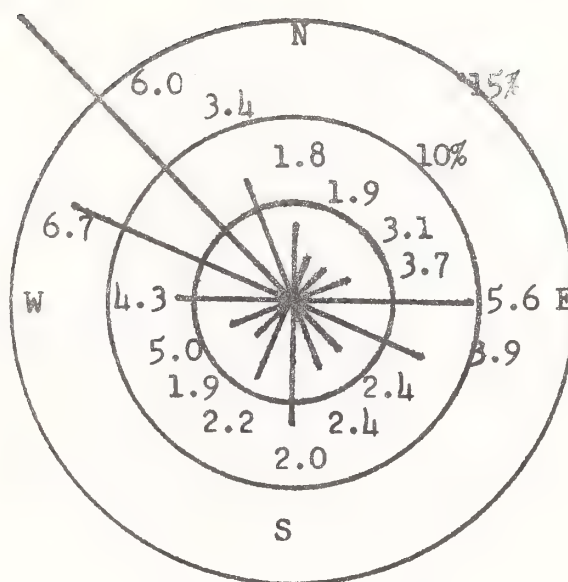






November 1977

Calm 4.6%

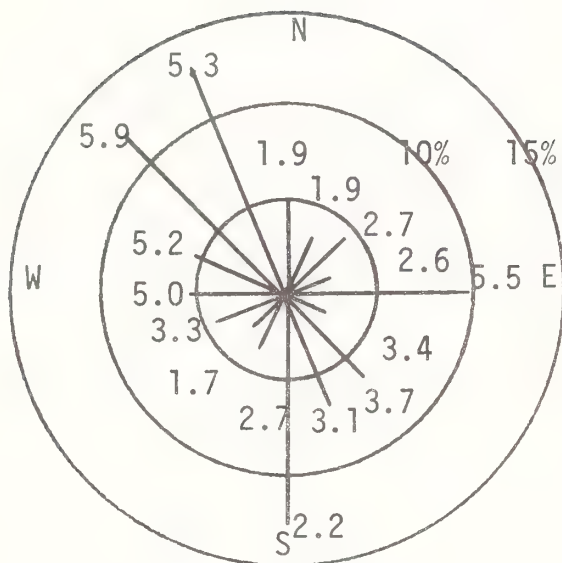


December 1977

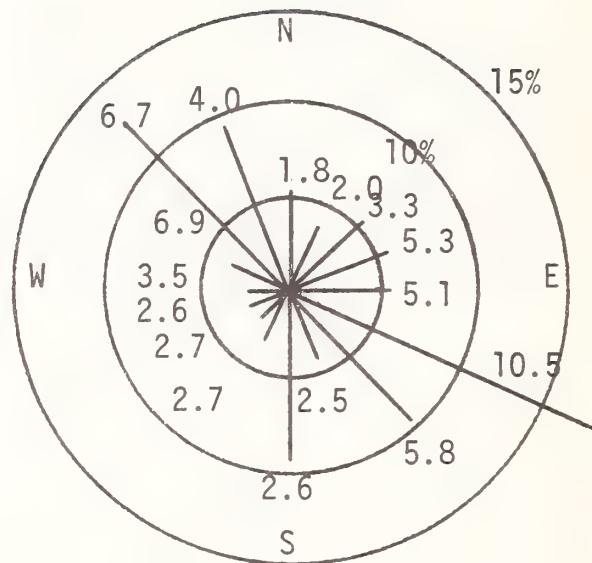
Calm 1.9%

# MONTHLY WIND ROSES

SCOBEE BORDER STATION, MONTANA

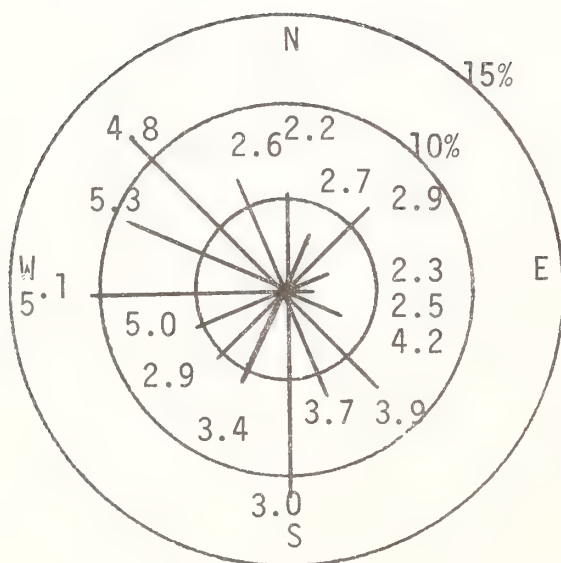


January 1978  
Calm 2.8%  
Total Hours 712

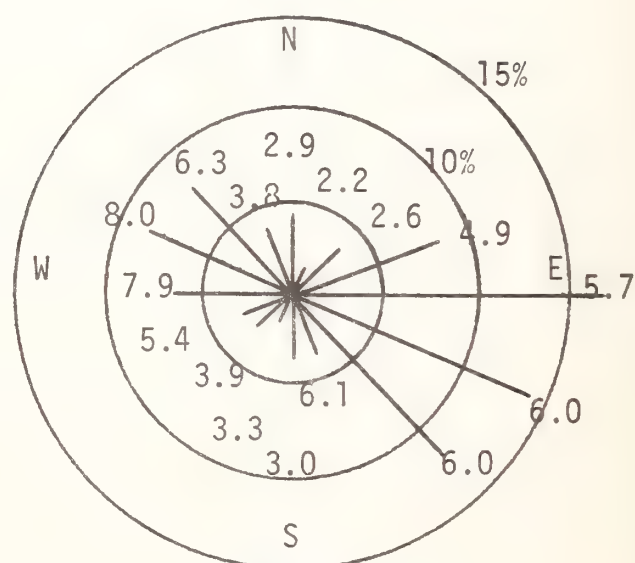


February 1978  
Calm 0.6%  
Total Hours 656

Monthly Wind Roses  
Border Site  
Scobey, Montana

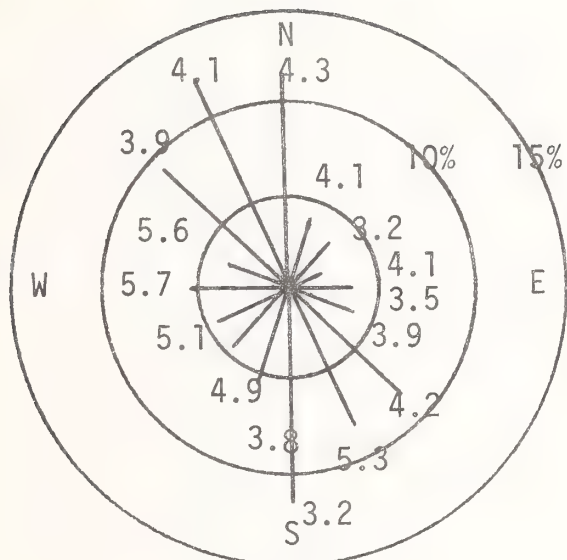


March 1978  
Calm 0.8%  
Total Hours 717

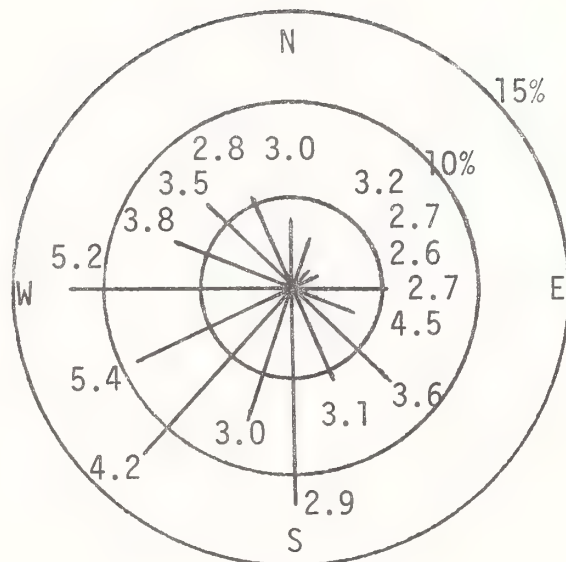


April 1978  
Calm 2.0%  
Total Hours 687



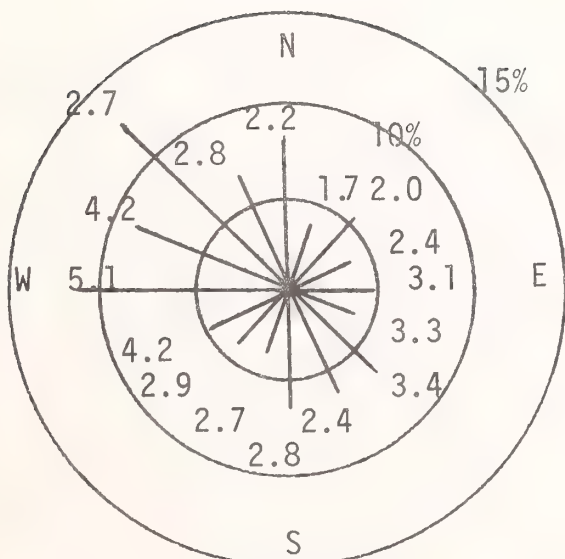


May 1978  
Calm 0.6%  
Total Hours 721

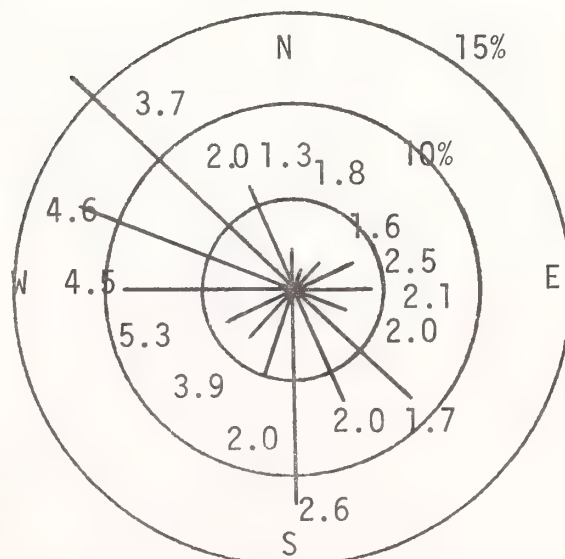


June 1978  
Calm 1.3%  
Total Hours 623

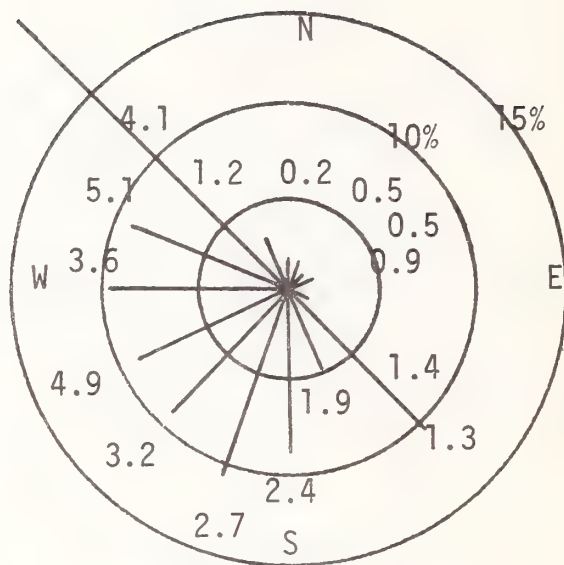
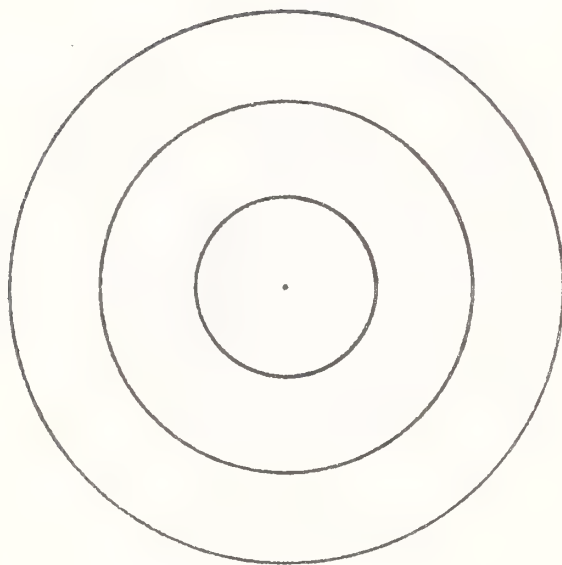
### Monthly Wind Roses Border Site Scobey, Montana



July 1978  
Calm 1.0%  
Total Hours 715

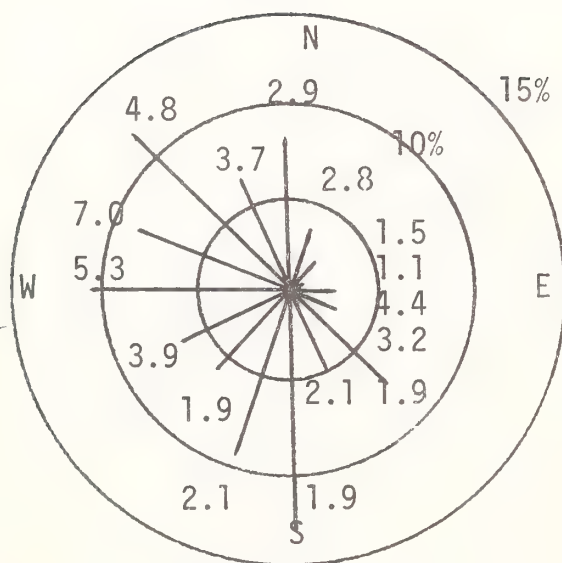


August 1978  
Calm 3.4%  
Total Hours 320

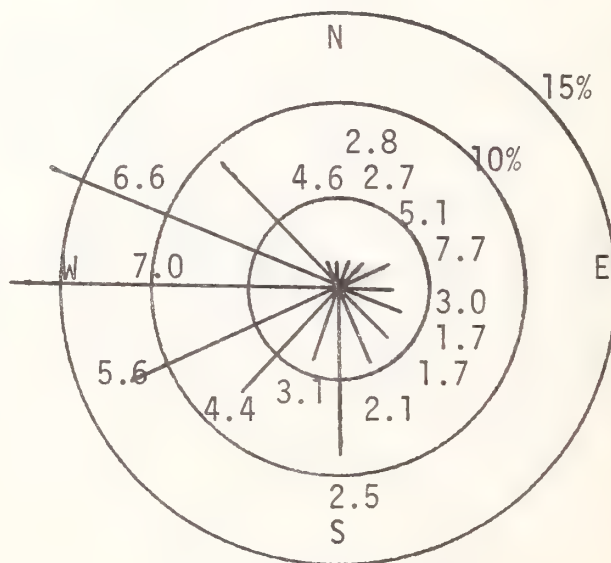


October 1978  
Calm 2.8%  
Total Hours 145

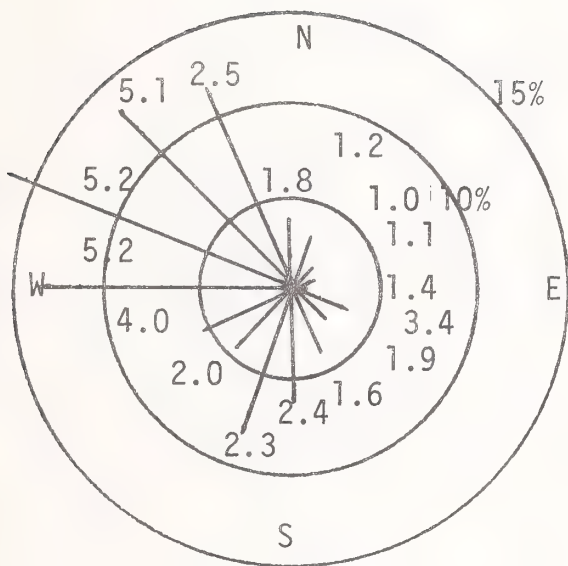
### Monthly Wind Roses Border Site Scobey, Montana



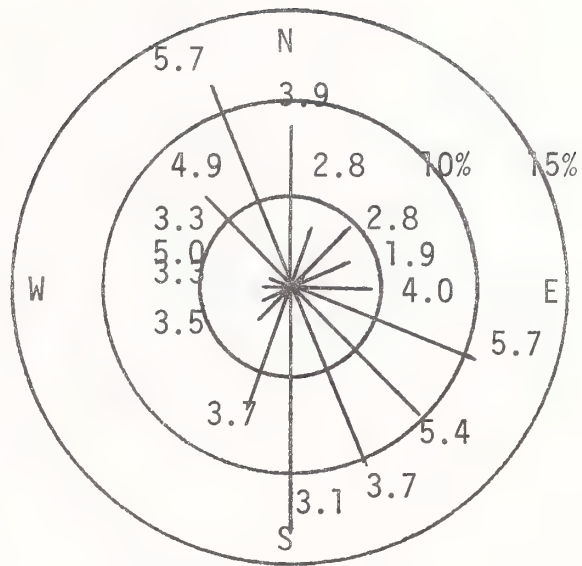
November 1978  
Calm 6.0%  
Total Hours 664



December 1978  
Calm 2.5%  
Total Hours 706

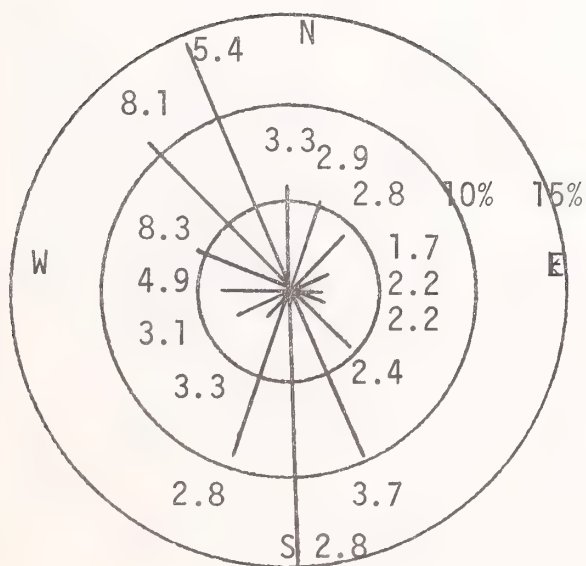


January 1979  
Calm 1.5%  
Total Hours 731

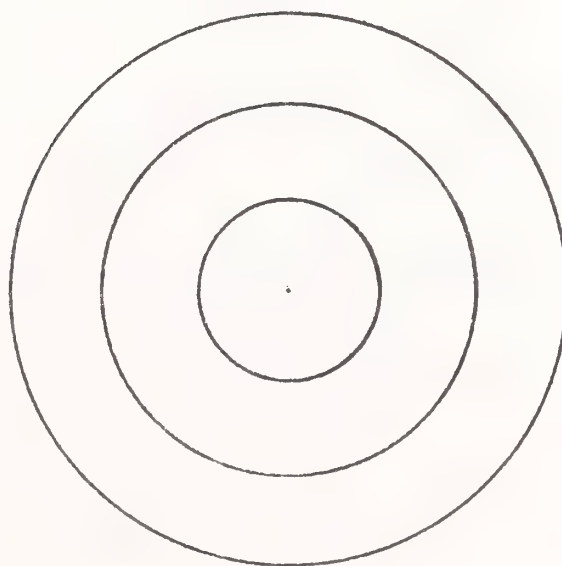


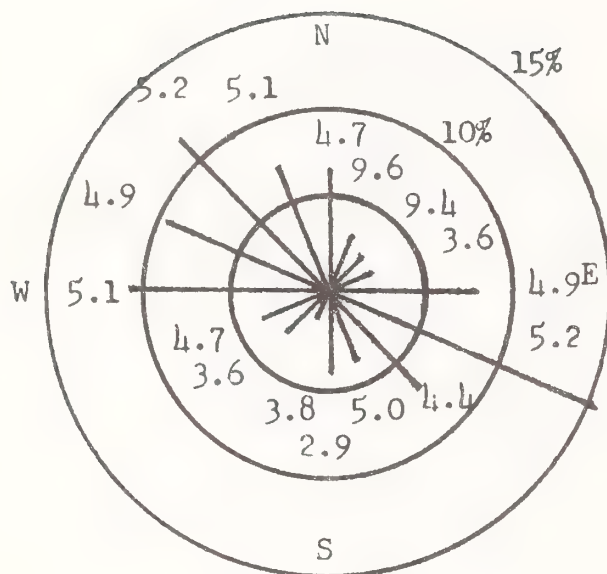
February 1979  
Calm 0.7%  
Total Hours 653

Monthly Wind Roses  
Border Site  
Scobey, Montana



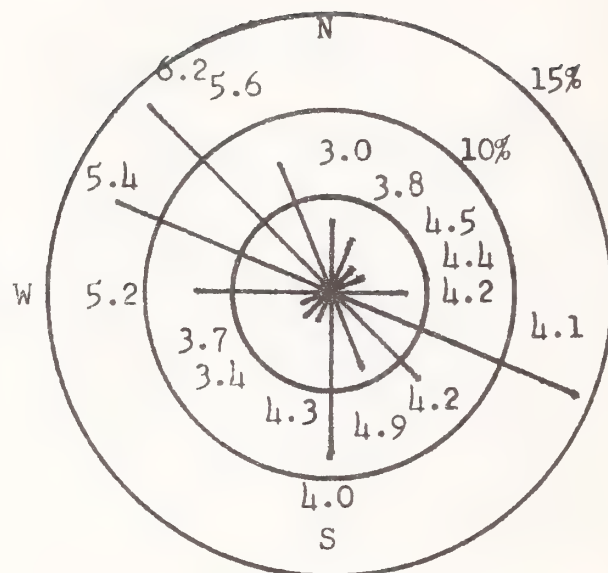
March 1979  
Calm 0.4%  
Total Hours 727





March 1977

Calm 2.0%



April 1977

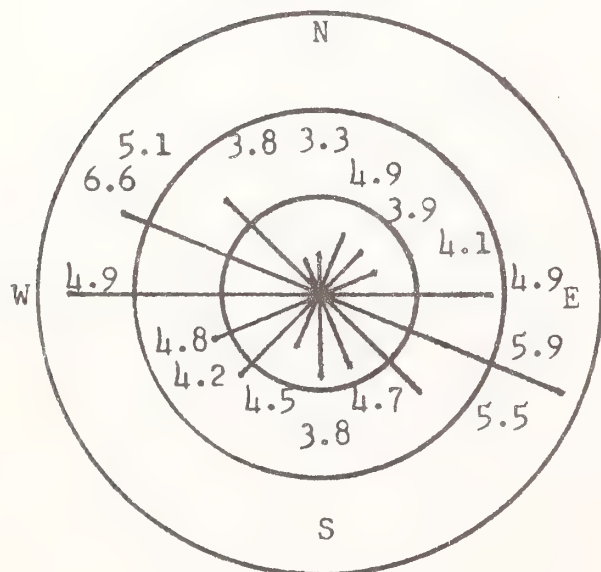
Calm 3.5%

# MONTHLY WIND ROSES

GLASGOW, MONTANA

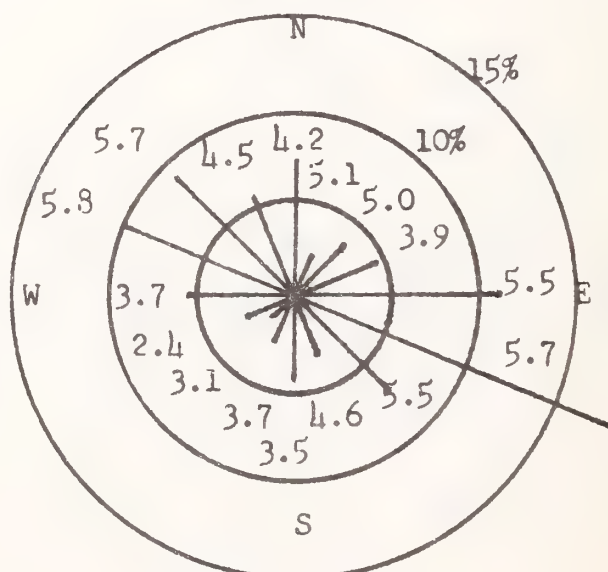
May 1977

Calm 2.0%

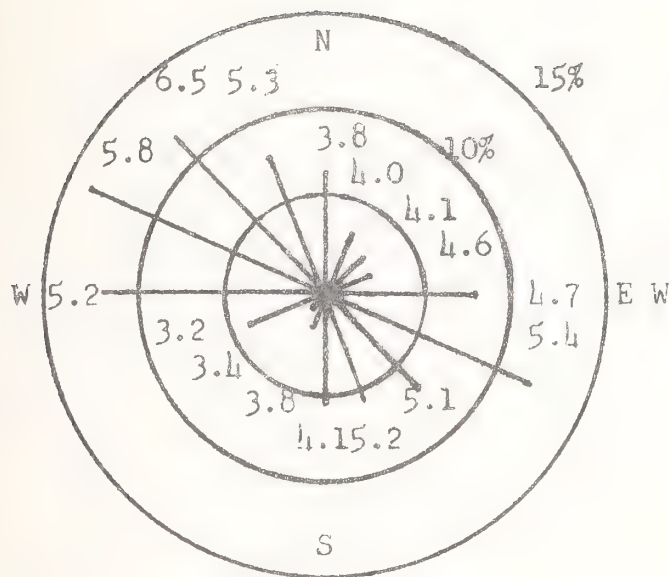


June 1977

Calm 2.5%

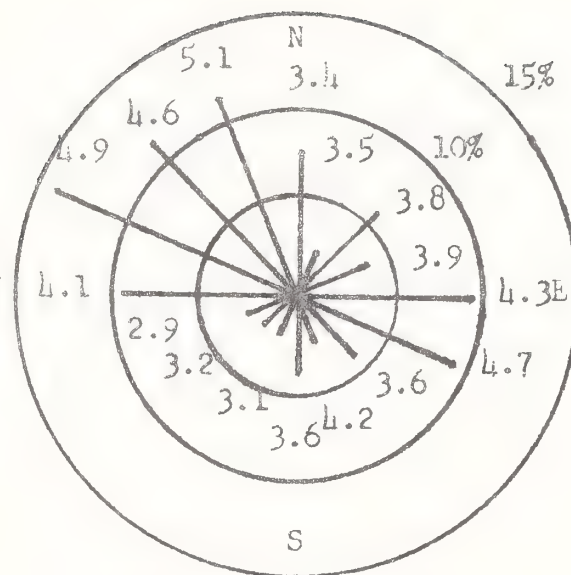






July 1977

Calm 2.3%



August 1977

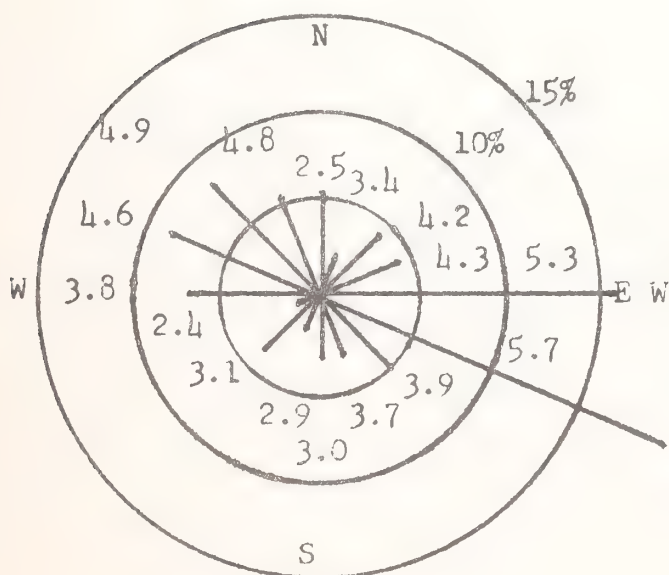
Calm 2.7%

# MONTHLY WIND ROSES

GLASGOW, MONTANA

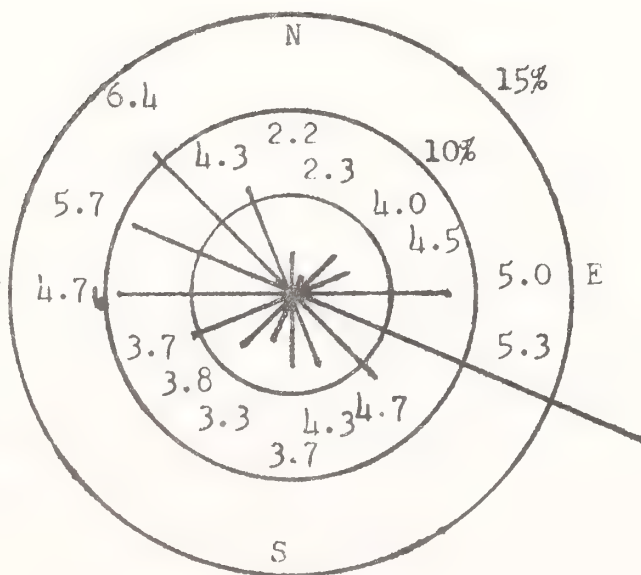
September 1977

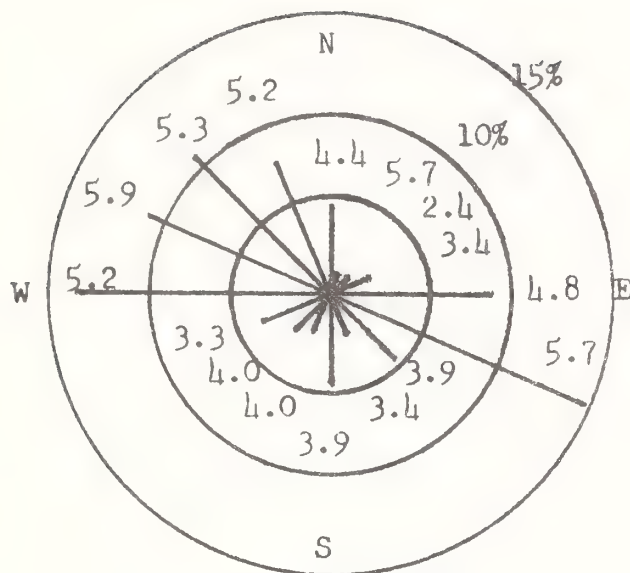
Calm 3.1%



October 1977

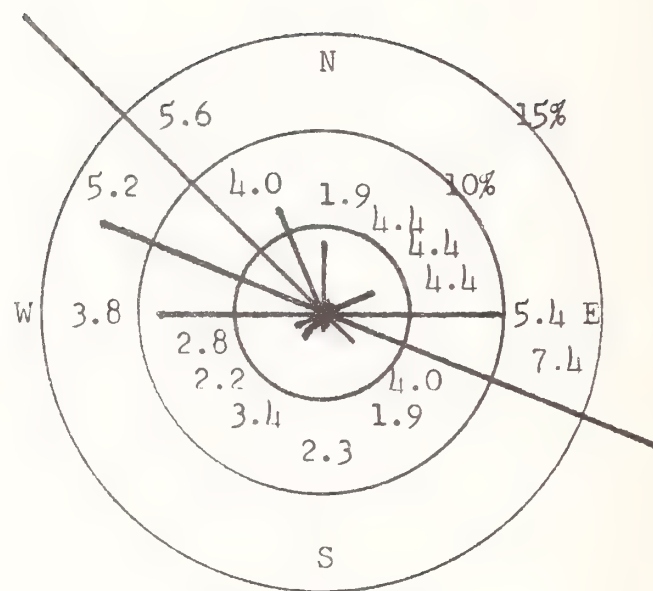
Calm 2.7%





November 1977

Calm 5.1%

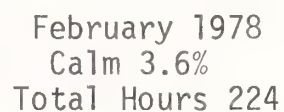
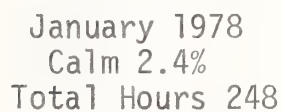


December 1977

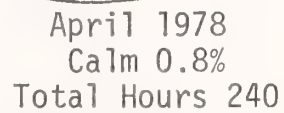
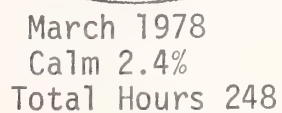
Calm 4.4%

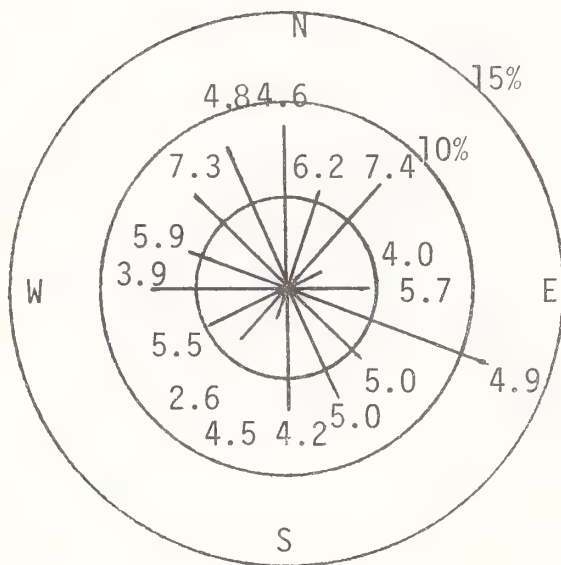
MONTHLY WIND ROSES

GLASGOW, MONTANA

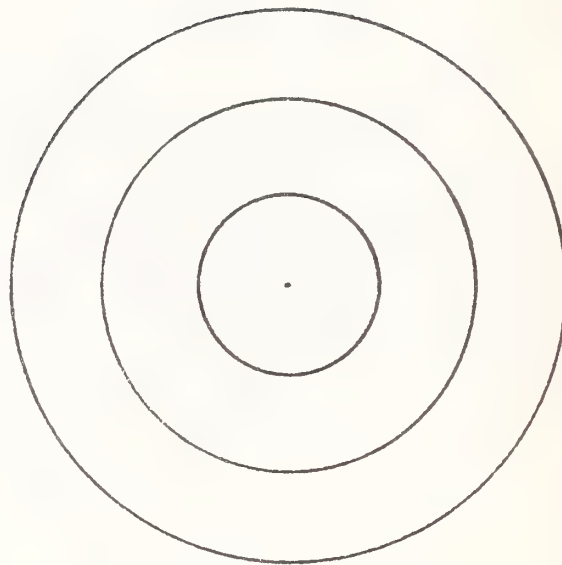


Monthly Wind Roses  
National Weather Service  
Glasgow, Montana

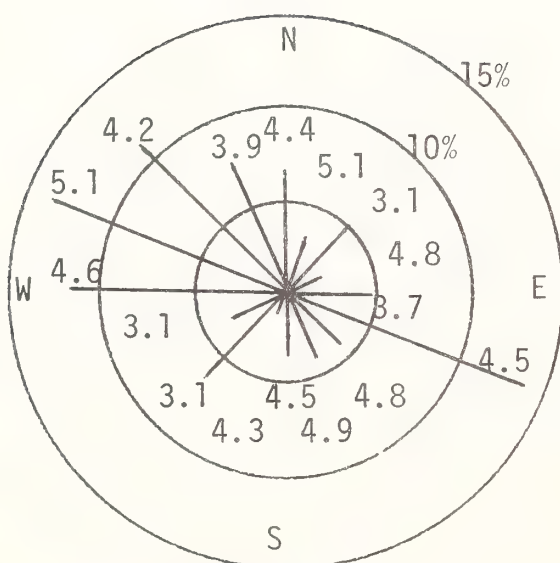




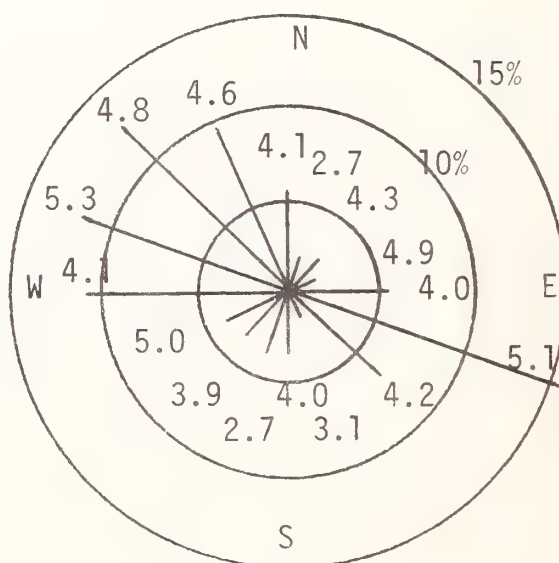
May 1978  
Calm 0.8%  
Total Hours 248



### Monthly Wind Roses National Weather Service Glasgow, Montana

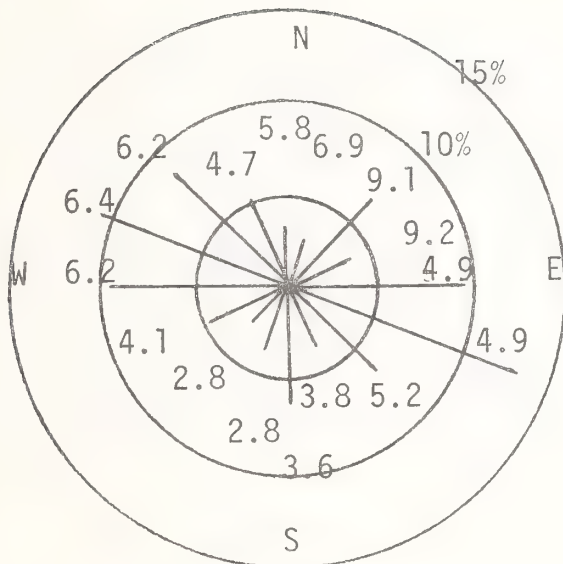


July 1978  
Calm 2.1%  
Total Hours 243

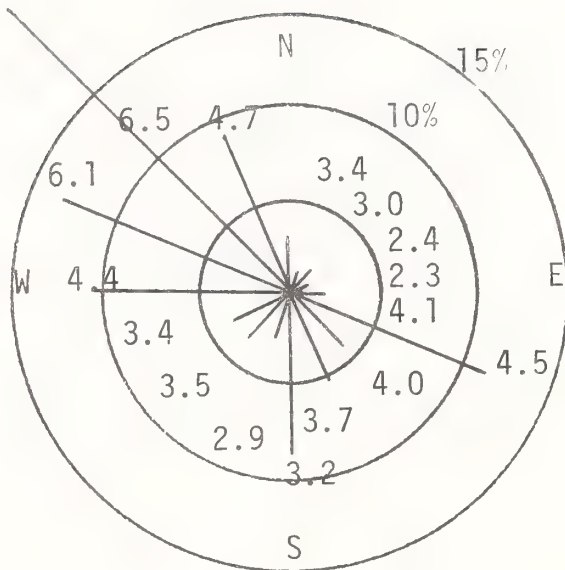


August 1978  
Calm 0.8%  
Total Hours 246



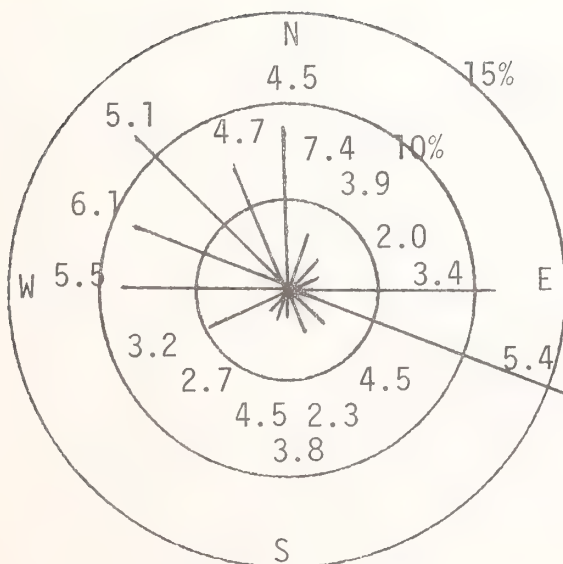


September 1978  
Calm 3.0%  
Total Hours 233

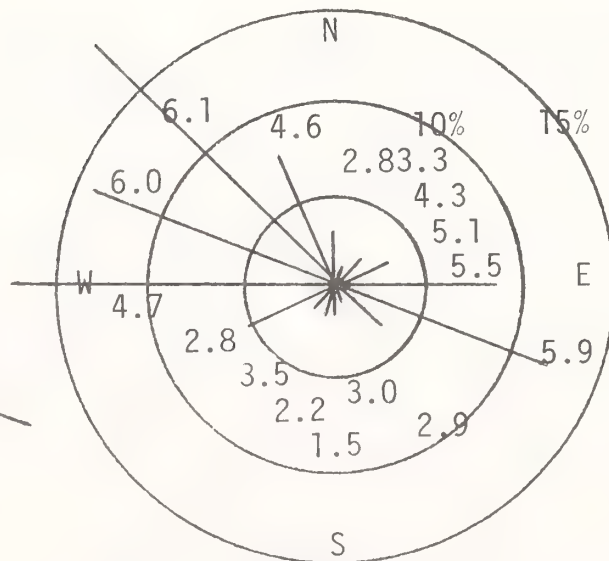


October 1978  
Calm 3.3%  
Total Hours 240

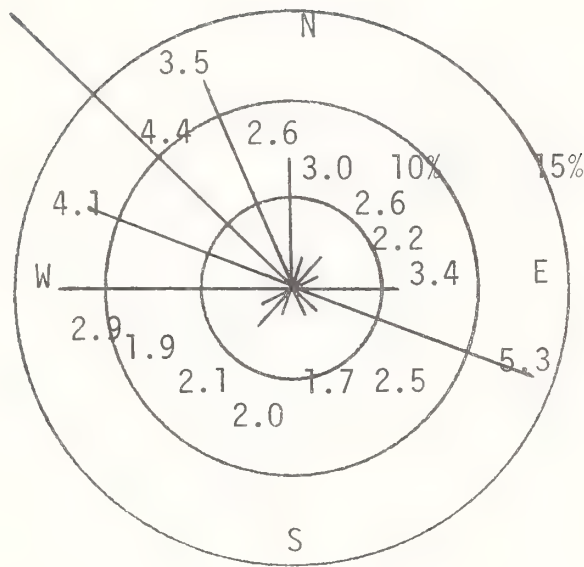
Monthly Wind Roses  
National Weather Service  
Glasgow, Montana



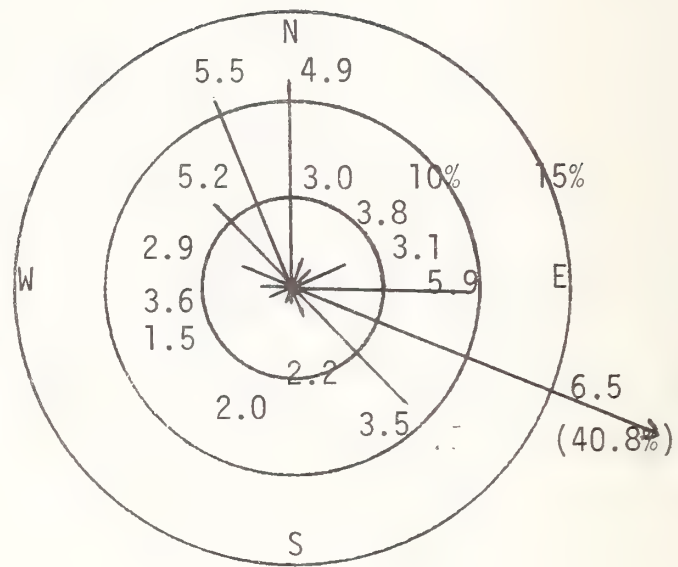
November 1978  
Calm 7.6%  
Total Hours 223



December 1978  
Calm 5.1%  
Total Hours 235

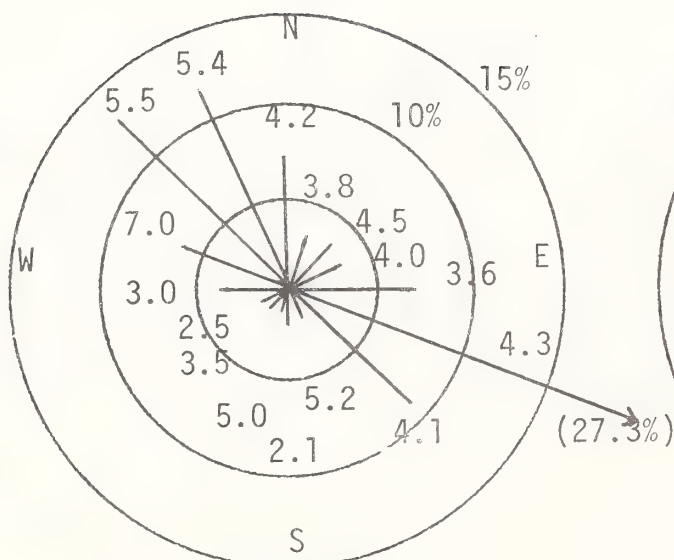


January 1979  
Calm 10.7%  
Total Hours 224

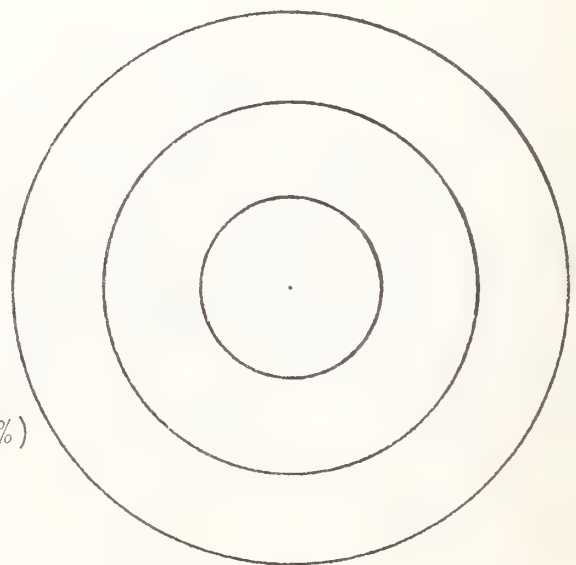


February 1979  
Calm 2.8%  
Total Hours 218

Monthly Wind Roses  
National Weather Service  
Glasgow, Montana



March 1979  
Calm 2.5%  
Total Hours 242



MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES      AIR QUALITY BUREAU    HELENA, MONTANA

CITY: SCOBEEY      AGENCY: AQB      AREA: POPLAR RIVER      SITE: BORDER STATION

PARAMETER:      WIND ROSE      UNITS: PERCENT      COLLECTION: CLIMATRONICS      DATE: MARCH 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	2.7	1.1	1.6	0.6	0.8	0.8	1.7	2.1	1.6	1.1	0.8	1.0	2.0	1.8	1.8	2.0	23.6
1.6- 3.0	0.7	0.4	0.3	0.0	1.4	1.0	0.8	1.8	2.4	2.0	0.8	0.4	1.3	0.4	1.7	1.7	17.3
3.1- 5.0	1.3	0.8	0.1	0.1	0.1	1.6	1.6	0.8	4.4	3.3	1.3	0.7	2.1	1.3	2.7	2.1	24.3
5.1- 8.0	1.4	0.6	0.0	0.0	0.7	1.3	1.3	1.1	1.6	1.7	1.1	1.3	2.4	1.8	4.2	2.5	23.1
8.1-10.0	0.8	1.6	1.0	0.0	0.3	0.3	0.0	0.0	0.0	0.1	0.3	1.1	1.8	0.7	1.8	0.7	10.6
10.1-14.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.1	0.0	0.3	0.0	0.0	0.0	1.0
AV SPEED	3.5	5.1	3.9	1.4	3.3	3.9	3.2	2.8	3.4	3.6	3.8	5.0	4.7	4.4	4.9	4.1	
NO. HOURS	49.	33.	21.	6.	24.	36.	39.	42.	70.	59.	32.	32.	70.	43.	87.	64.	707.

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES      AIR QUALITY BUREAU    HELENA, MONTANA

CITY: SCOBEEY      AGENCY: AQB      AREA: POPLAR RIVER      SITE: BORDER STATION

PARAMETER:      WIND ROSE      UNITS: PERCENT      COLLECTION: CLIMATRONICS      DATE: APRIL 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.8	2.4	1.9	1.5	1.4	0.1	1.3	1.9	1.7	2.6	1.8	0.7	1.1	1.1	2.2	2.2	25.8
1.6- 3.0	1.4	0.7	1.1	0.7	1.4	0.3	0.8	1.3	2.1	3.2	0.8	0.4	0.3	0.7	2.2	1.7	19.0
3.1- 5.0	1.4	0.1	0.3	0.6	1.1	0.6	1.1	1.7	3.3	1.8	1.8	1.1	1.9	1.4	2.8	3.2	24.2
5.1- 8.0	0.0	0.3	0.0	0.0	0.6	0.3	1.4	0.6	2.1	1.4	1.5	1.5	2.2	3.2	4.4	1.4	20.8
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.3	0.7	0.0	0.0	0.1	1.9	1.4	1.7	1.5	8.2
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.0	0.0	0.1	0.4	0.1	0.1	0.1	0.1	1.8
AV SPEED	2.5	1.7	1.5	1.8	2.7	3.4	3.9	2.9	4.0	2.8	3.4	3.8	5.5	5.2	4.7	4.0	
NO. HOURS	34.	25.	24.	20.	33.	9.	38.	43.	71.	65.	44.	31.	55.	57.	98.	73.	720.

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES										AIR QUALITY BUREAU HELENA, MONTANA							
CITY: SCOBEEY				AGENCY: AQB				AREA: POPLAR RIVER				SITE: BORDER STATION					
PARAMETER:		WIND ROSE			UNITS:		PERCENT		COLLECTION: CLIMATRONICS				DATE: MAY 1977				
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.0	2.4	6.0	1.2	1.2	1.2	1.2	0.0	3.6	3.6	1.2	1.2	0.0	2.4	1.2	3.6	29.8
1.6- 3.0	0.0	3.6	1.2	2.4	1.2	1.2	2.4	2.4	1.2	1.2	0.0	1.2	0.0	0.0	0.0	2.4	20.2
3.1- 5.0	2.4	0.0	1.2	2.4	3.6	4.8	2.4	0.0	1.2	1.2	1.2	2.4	0.0	0.0	0.0	0.0	22.6
5.1- 8.0	0.0	0.0	0.0	0.0	4.8	6.0	1.2	2.4	0.0	1.2	1.2	0.0	0.0	0.0	1.2	0.0	17.9
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.1
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.0	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	0.0	0.0	2.4
AV SPEED	3.6	1.8	1.6	2.6	4.9	4.7	4.8	6.9	2.1	2.7	3.6	2.6	0.0	0.7	4.1	1.5	
NO. HOURS	2.	5.	7.	6.	9.	11.	8.	8.	5.	6.	3.	4.	1.	2.	2.	5.	84.

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES										AIR QUALITY BUREAU HELENA, MONTANA							
CITY: SCOBEEY MT				AGENCY: AQB				AREA: POPLAR RIVER				SITE: BORDER STATION					
PARAMETER:		WIND ROSE			UNITS:		PERCENT		COLLECTION: BENDIX-FRIEZ				DATE: SEPT 1977				
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	7.1	4.6	5.2	3.3	6.7	5.0	3.3	2.8	4.5	2.8	0.7	0.6	3.0	6.5	4.5	5.4	65.9
1.6- 3.0	1.1	0.0	0.9	1.7	5.2	2.2	0.6	0.4	1.7	1.1	0.6	0.6	1.9	2.0	2.6	2.6	25.0
3.1- 5.0	0.4	0.2	0.2	0.0	0.2	0.0	0.4	0.7	0.0	0.4	0.0	0.6	0.4	0.6	0.7	1.1	5.8
5.1- 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.4	0.6	1.1
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.4	0.2	0.0	0.2	0.0	0.2	0.2	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.2	1.7
AV SPEED	1.2	1.1	1.3	1.4	1.8	1.5	1.5	1.7	1.3	1.3	1.6	2.8	1.7	1.7	2.5	2.0	
NO. HOURS	48.	27.	34.	28.	65.	40.	24.	21.	33.	25.	7.	10.	28.	49.	47.	53.	539.



MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES										AIR QUALITY BUREAU HELENA, MONTANA								
CITY: SCOBEEY MT				AGENCY: AQB				AREA: POPLAR RIVER				SITE: BORDER STATION						
PARAMETER:		WIND ROSE			UNITS:		PERCENT		COLLECTION: CLIMATRONICS				DATE: OCT 1977					
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	
SPEED																		
0.1- 1.5	2.2	1.5	0.7	0.5	4.6	2.8	3.0	5.8	5.5	4.0	1.3	1.8	1.9	3.6	4.6	3.6	47.4	
1.6- 3.0	0.5	1.3	0.7	0.4	1.2	1.5	1.2	2.0	3.8	3.0	1.1	0.9	2.2	3.0	2.4	2.0	27.2	
3.1- 5.0	0.0	0.1	0.0	0.0	0.3	0.8	0.8	1.8	2.0	1.1	1.3	0.8	1.3	0.9	0.8	0.3	12.4	
5.1- 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.3	0.7	0.7	1.2	1.9	1.3	0.1	0.0	7.5	
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.5	0.0	0.0	1.1	
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.0	0.0	0.0	1.2	
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CALM	0.1	0.4	0.0	0.1	0.0	0.1	0.1	0.3	0.4	0.4	0.1	0.0	0.3	0.3	0.1	0.3	3.1	
AV SPEED	1.2	1.4	1.6	1.5	1.6	1.9	2.0	1.8	2.4	2.2	2.8	4.2	4.5	3.0	1.9	1.6		
NO. HOURS	21.	25.	10.	8.	45.	39.	40.	73.	97.	68.	34.	39.	65.	72.	60.	46.	742.	

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES											AIR QUALITY BUREAU HELENA, MONTANA							
CITY: SCOBEEY MT				AGENCY: AQB				AREA: POPLAR RIVER				SITE: BORDER STATION						
PARAMETER:		WIND ROSE			UNITS: PERCENT			COLLECTION: CLIMATRONICS				DATE: NOV 1977						
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL	
SPEED																		
0.1- 1.5	2.6	1.4	1.1	1.1	1.0	1.3	2.5	2.1	3.2	3.3	1.3	1.4	1.4	1.3	1.0	1.1	27.1	
1.6- 3.0	0.7	0.7	0.6	0.6	0.3	0.1	1.7	3.2	4.0	1.1	0.0	0.4	1.0	0.8	0.7	2.9	18.8	
3.1- 5.0	0.0	0.0	0.1	0.1	1.5	0.3	1.1	1.7	3.8	1.1	0.7	1.7	1.4	1.8	2.4	2.5	20.2	
5.1- 8.0	0.0	0.0	0.0	0.0	0.6	0.4	1.1	1.0	1.3	1.0	0.7	0.8	2.0	3.2	2.2	2.4	16.6	
8.1-10.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.6	0.3	0.4	0.6	1.0	1.7	2.5	0.8	7.9	
10.1-14.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.1	1.0	1.8	0.4	0.3	4.0	
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.6	
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	
CALM	0.8	0.3	0.6	0.3	0.1	0.0	0.3	0.3	0.6	0.3	0.4	0.0	0.1	0.3	0.1	0.1	4.6	
AV SPEED	0.9	1.2	1.2	1.3	3.8	2.5	2.7	2.6	2.9	2.8	3.8	4.2	5.7	6.7	5.8	14.4		
NO. HOURS	30.	17.	17.	15.	27.	15.	48.	59.	96.	52.	26.	36.	57.	81.	67.	74.	717.	

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES										AIR QUALITY BUREAU HELENA, MONTANA							
CITY: SCOBEEY			AGENCY: AQB			AREA: POPLAR RIVER				SITE: BORDER STATION							
PARAMETER:		WIND ROSE		UNITS: PERCENT		COLLECTION: CLIMATRONICS						DATE: DEC 1977					
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.6	0.8	0.4	0.8	1.6	1.1	1.1	0.9	2.4	1.9	1.3	0.8	0.9	1.2	1.9	1.5	20.4
1.6- 3.0	1.5	0.9	0.8	0.4	0.8	2.0	1.1	1.5	2.0	1.3	0.7	0.4	0.5	0.8	1.6	1.5	17.9
3.1- 5.0	0.7	0.4	0.8	0.4	2.2	2.3	0.5	0.8	1.5	1.1	0.4	0.5	2.7	2.8	6.2	2.7	26.0
5.1- 8.0	0.3	0.0	0.3	1.2	2.4	1.2	0.4	0.1	0.0	0.1	0.1	0.4	1.2	3.5	6.2	0.8	18.4
8.1-10.0	0.0	0.0	0.0	0.0	2.0	0.8	0.0	0.0	0.0	0.0	0.0	0.8	0.5	2.2	2.8	0.3	9.4
10.1-14.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	1.6	2.4	0.0	5.1
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.1	0.0	0.8
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.4	0.1	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.0	0.3	0.1	0.1	0.1	0.0	0.0	1.9
AV SPEED	1.8	1.9	3.1	3.7	5.6	3.9	2.4	2.4	2.0	2.2	1.9	5.0	4.3	6.7	6.0	3.4	
NO. HOURS	33.	17.	17.	22.	74.	56.	24.	20.	45.	33.	21.	25.	45.	96.	158.	50.	741.

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES										AIR QUALITY BUREAU HELENA, MONTANA							
SITE: 340001		YEAR: 1978		MONTH: 1													
WIND ROSE FREQUENCY TABLE																	
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	2.2	1.4	1.8	1.1	1.4	0.8	1.5	2.0	4.6	0.4	1.4	2.0	0.4	0.6	2.1	2.4	26.3
1.6- 3.0	1.5	1.1	0.6	0.4	1.1	0.6	1.7	2.2	5.1	1.7	0.6	0.6	1.0	0.8	1.3	2.0	22.2
3.1- 5.0	1.3	0.6	1.8	1.0	2.4	0.8	1.4	1.5	2.7	1.4	0.6	0.7	2.0	1.4	1.8	2.8	24.2
5.1- 8.0	0.0	0.0	0.3	0.1	2.5	0.4	1.4	0.6	0.0	0.0	0.0	0.7	1.0	1.4	2.9	3.2	14.6
8.1-10.0	0.0	0.0	0.0	0.0	2.1	0.1	0.3	0.4	0.1	0.0	0.0	0.4	0.4	0.6	2.9	0.8	8.3
10.1-14.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.3	1.1	1.7	4.1
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.4
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	1.9	1.9	2.7	2.6	5.5	3.4	3.7	3.1	2.2	2.7	1.7	3.3	5.0	5.2	5.9	5.3	
CALM	20.																
NO. HOURS	36.	22.	32.	19.	71.	20.	45.	49.	89.	25.	18.	31.	37.	37.	87.	94.	712.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 2

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	3.0	1.8	0.9	0.3	1.1	0.3	1.5	0.9	2.1	1.2	1.1	0.8	0.3	0.3	1.7	1.5	18.9
1.6- 3.0	1.5	1.5	1.1	0.3	0.6	0.2	2.0	1.8	3.5	0.6	0.0	0.5	0.9	0.6	1.7	2.7	19.5
3.1- 5.0	0.5	0.5	2.6	1.4	0.9	1.4	2.0	1.4	3.7	1.1	0.6	0.6	0.5	0.3	2.0	2.3	21.5
5.1- 8.0	0.2	0.2	0.6	3.0	1.7	2.6	1.1	0.0	0.0	0.3	0.3	0.2	0.2	0.8	2.6	1.4	14.9
8.1-10.0	0.0	0.0	0.0	0.2	0.6	3.7	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.5	1.8	0.9	8.5
10.1-14.0	0.0	0.0	0.0	0.0	0.3	7.0	2.0	0.0	0.0	0.0	0.0	0.0	0.2	0.6	2.0	0.0	12.0
14.1-18.0	0.0	0.0	0.0	0.0	0.0	3.2	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.9	0.2	4.6
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	1.8	2.0	3.3	5.3	5.1	10.5	5.8	2.5	2.6	2.7	2.7	2.6	3.5	6.9	6.7	4.0	
CALM	4.																
NO. HOURS	34.	26.	34.	34.	34.	120.	63.	27.	61.	21.	13.	13.	13.	21.	83.	59.	656.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 3

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	2.4	1.4	2.9	1.4	0.8	1.0	1.8	1.8	3.3	1.8	1.8	0.6	0.8	1.4	2.0	2.6	27.9
1.6- 3.0	1.7	0.3	0.8	0.8	0.1	0.6	1.7	1.0	3.5	0.8	1.1	0.4	0.8	1.5	2.5	1.8	19.5
3.1- 5.0	1.1	0.7	1.1	0.1	0.7	0.6	1.1	1.7	2.4	1.7	1.7	2.0	4.0	2.4	2.6	1.5	25.4
5.1- 8.0	0.3	0.6	1.4	0.4	0.0	0.6	2.1	0.8	1.3	1.1	0.3	1.3	3.5	1.3	2.5	0.8	18.1
8.1-10.0	0.0	0.0	0.1	0.0	0.0	0.7	0.4	0.8	0.4	0.1	0.3	0.7	0.6	1.1	0.8	0.0	6.1
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.6	1.3	0.7	0.0	2.6
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	2.2	2.7	2.9	2.3	2.5	4.2	3.9	3.7	3.0	3.4	2.9	5.0	5.1	5.3	4.8	2.6	
CALM	6.																
NO. HOURS	39.	21.	46.	20.	12.	24.	51.	44.	78.	40.	37.	36.	74.	64.	82.	49.	717.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 4

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.3	1.0	0.9	0.0	1.2	1.2	0.7	0.3	1.0	0.7	0.4	0.3	0.3	0.4	0.4	1.0	11.2
1.6- 3.0	1.6	0.1	1.2	1.2	1.2	1.2	1.0	0.3	0.6	0.1	0.1	0.3	0.3	0.3	0.6	0.7	10.8
3.1- 5.0	1.2	0.6	1.2	3.8	5.7	3.8	2.9	0.7	1.3	0.4	1.2	0.7	2.2	1.7	2.5	1.2	31.0
5.1- 8.0	0.3	0.0	0.4	2.9	5.1	4.2	4.5	1.0	0.3	0.6	0.6	1.2	1.5	1.7	1.5	0.6	26.3
8.1-10.0	0.1	0.0	0.0	0.3	1.5	2.3	2.5	0.4	0.0	0.0	0.1	0.1	0.3	1.5	1.2	0.3	10.6
10.1-14.0	0.0	0.0	0.0	0.0	1.5	1.6	0.6	0.6	0.0	0.0	0.0	0.0	0.7	2.2	1.5	0.0	8.6
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.6
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.0	0.0	0.7
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
AV SPEED	2.9	2.2	2.6	4.9	5.7	6.0	6.0	6.1	3.0	3.3	3.9	5.4	7.9	8.0	6.3	3.8	
CALM	14.																
NO. HOURS	31.	12.	25.	56.	110.	98.	84.	23.	22.	13.	17.	19.	43.	56.	52.	26.	687.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 5

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.2	0.8	1.0	0.1	0.7	0.6	1.0	0.6	2.8	1.0	1.0	1.0	0.4	0.4	1.1	1.9	15.5
1.6- 3.0	1.8	1.1	1.0	0.6	1.0	0.8	1.8	1.1	3.6	1.0	0.6	0.3	1.0	0.4	2.5	2.6	21.1
3.1- 5.0	4.4	0.7	1.2	1.0	1.0	1.4	2.9	2.1	2.8	1.4	0.8	1.5	1.1	0.6	3.3	4.2	30.4
5.1- 8.0	2.6	1.1	0.4	0.6	0.6	1.0	2.2	3.2	1.5	1.8	1.1	0.4	1.4	0.6	2.1	2.6	23.2
8.1-10.0	1.2	0.4	0.1	0.0	0.1	0.1	0.4	0.8	0.3	0.1	0.8	1.2	1.1	0.6	0.3	1.0	8.7
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.1	0.4	0.3	0.0	0.0	1.1
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	4.3	4.1	3.2	4.1	3.5	3.9	4.2	5.3	3.2	3.8	4.9	5.1	5.7	5.6	3.9	4.1	
CALM	4.																
NO. HOURS	82.	30.	27.	16.	24.	28.	60.	56.	80.	38.	32.	33.	39.	20.	67.	89.	721.



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 6

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.3	1.3	0.6	0.6	1.9	0.5	1.4	1.0	2.4	2.1	1.6	1.0	1.1	1.3	1.6	2.2	21.0
1.6- 3.0	0.6	0.2	0.2	0.2	1.6	0.8	2.1	1.6	4.3	2.1	2.2	0.6	1.4	1.4	1.3	0.8	21.5
3.1- 5.0	1.6	0.3	0.0	0.3	0.8	1.3	1.9	2.2	3.7	1.9	4.2	4.3	3.7	2.6	1.9	1.3	32.1
5.1- 8.0	0.5	1.1	0.3	0.0	0.8	0.8	1.3	0.5	0.8	1.1	3.0	1.0	3.0	1.1	1.3	0.8	17.5
8.1-10.0	0.0	0.0	0.0	0.2	0.0	0.5	0.3	0.0	0.0	0.0	0.5	1.6	1.6	0.2	0.2	0.0	5.0
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.2	0.0	0.2	0.6	0.5	0.2	0.0	0.0	1.8
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	3.0	3.2	2.7	2.6	2.7	4.5	3.6	3.1	2.9	3.0	4.2	5.4	5.2	3.8	3.5	2.8	
CALM	8.																
NO. HOURS	25.	18.	7.	8.	32.	24.	45.	33.	71.	45.	73.	58.	71.	42.	39.	32.	623.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 7

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	3.8	2.4	3.1	1.8	1.4	1.0	1.7	2.1	2.4	1.3	1.7	1.0	1.3	2.4	3.5	2.1	32.7
1.6- 3.0	1.8	1.4	1.1	1.0	1.3	0.8	2.1	2.2	1.8	1.4	1.1	1.3	1.7	1.4	5.2	2.0	27.6
3.1- 5.0	2.1	0.3	1.1	1.1	1.7	0.8	0.7	1.4	1.8	0.3	0.7	0.8	2.7	2.0	3.1	2.1	22.7
5.1- 8.0	0.1	0.1	0.3	0.0	0.4	0.7	1.3	0.1	0.4	0.6	0.4	1.4	3.4	1.3	1.0	0.7	12.2
8.1-10.0	0.1	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.0	0.0	0.3	0.4	1.3	0.3	0.1	0.0	3.2
10.1-14.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.4	0.8	0.0	0.0	1.7
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	2.2	1.7	2.0	2.4	3.1	3.3	3.4	2.4	2.8	2.7	2.9	4.2	5.1	4.2	2.7	2.8	
CALM	7.																
NO. HOURS	57.	30.	40.	29.	35.	25.	44.	43.	47.	25.	30.	35.	76.	58.	92.	49.	715.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 8

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.9	0.6	1.3	1.3	2.2	0.9	4.7	3.1	3.8	2.8	0.9	0.9	1.6	0.9	2.2	3.1	32.2
1.6- 3.0	0.3	0.6	0.6	0.9	0.3	1.3	3.1	1.9	2.8	0.9	0.6	0.6	1.9	2.2	4.4	1.6	24.1
3.1- 5.0	0.3	0.0	0.3	1.3	1.6	0.6	0.6	0.9	3.8	1.3	0.6	0.3	2.5	5.0	7.2	0.9	27.2
5.1- 8.0	0.0	0.0	0.0	0.3	0.3	0.0	0.3	0.3	0.9	0.0	0.9	1.3	1.6	2.5	3.1	0.3	11.9
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.9	1.3	1.6	0.0	0.0	4.1
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.6
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	1.3	1.8	1.6	2.5	2.1	2.0	1.7	2.0	2.6	2.0	3.9	5.3	4.5	4.6	3.7	2.0	
CALM	11.																
NO. HOURS	8.	4.	7.	12.	14.	9.	28.	20.	36.	16.	11.	14.	29.	35.	54.	19.	320.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 10

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.4	1.4	0.7	1.4	0.0	0.7	6.2	1.4	2.1	2.1	0.7	1.4	2.1	1.4	5.5	2.1	30.3
1.6- 3.0	0.0	0.0	0.0	0.0	0.0	0.7	4.1	2.8	4.1	2.8	2.8	0.7	1.4	0.7	2.8	0.7	23.4
3.1- 5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	2.1	5.5	4.1	1.4	4.8	2.1	3.4	0.0	24.1
5.1- 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	4.8	0.7	3.4	9.7	0.0	20.0
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.0	1.4
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.7
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	0.2	0.5	0.5	0.9	0.0	1.4	1.3	1.9	2.4	2.7	3.2	4.9	3.6	5.1	4.1	1.2	
CALM	4.																
NO. HOURS	2.	2.	1.	2.	0.	2.	15.	7.	12.	15.	13.	12.	14.	12.	31.	4.	145.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 11

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	2.1	1.5	0.9	0.3	0.3	0.8	3.9	2.4	6.5	4.1	3.0	0.8	0.5	1.8	2.3	0.5	31.5
1.6- 3.0	0.9	0.5	0.3	0.0	0.2	0.8	1.8	0.9	4.1	2.9	1.4	1.7	2.4	0.5	1.7	1.2	20.9
3.1- 5.0	4.4	0.9	0.3	0.0	0.8	0.3	1.2	1.4	2.0	2.0	0.5	2.4	3.3	1.7	3.5	3.9	28.8
5.1- 8.0	0.8	0.8	0.0	0.0	1.2	0.9	0.3	0.2	0.2	0.3	0.2	0.6	2.6	1.1	1.8	0.8	11.4
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.5	0.8	1.1	0.0	2.9
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.8	0.9	1.1	0.0	2.9
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2	0.0	0.6
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.8	0.0	0.0	1.1
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	2.9	2.8	1.5	1.1	4.4	3.2	1.9	2.1	1.9	2.1	1.9	3.9	5.3	7.0	4.8	3.7	
CALM	40.																
NO. HOURS	54.	24.	10.	2.	16.	18.	48.	32.	84.	61.	37.	40.	68.	52.	76.	42.	664.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1978 MONTH: 12

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.6	1.1	0.6	0.4	1.0	2.0	1.8	1.8	3.1	0.7	1.4	0.7	0.4	0.6	1.3	0.6	18.1
1.6- 3.0	0.3	0.0	0.0	0.1	1.3	0.8	1.7	1.6	2.8	1.7	1.0	2.3	2.1	1.7	1.3	0.4	19.1
3.1- 5.0	0.3	0.1	0.4	0.4	0.1	0.6	0.1	0.8	2.1	1.6	1.8	1.7	4.0	3.1	2.0	0.0	19.3
5.1- 8.0	0.1	0.4	0.6	0.3	0.1	0.0	0.0	0.3	0.8	0.1	2.7	4.8	4.8	5.7	2.0	0.1	22.9
8.1-10.0	0.0	0.1	0.6	0.6	0.4	0.0	0.0	0.0	0.0	0.1	0.4	2.1	2.3	4.2	1.3	0.3	12.5
10.1-14.0	0.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.1	1.0	1.3	0.3	7.1
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.1	0.0	0.0	0.6
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.4
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	2.8	2.7	5.1	7.7	3.0	1.7	1.7	2.1	2.5	3.1	4.4	5.6	7.0	6.6	5.9	4.6	
CALM	18.																
NO. HOURS	9.	13.	15.	20.	21.	24.	26.	32.	63.	30.	52.	85.	123.	117.	64.	12.	706.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1979 MONTH: 1

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	2.2	2.7	1.5	1.2	0.1	0.7	1.6	2.5	2.1	3.4	1.6	0.8	1.8	1.4	1.6	5.3	30.6
1.6- 3.0	1.0	0.1	0.4	0.1	0.1	1.0	0.3	0.8	1.9	2.1	2.3	1.4	1.9	2.2	2.6	2.6	20.8
3.1- 5.0	0.7	0.4	0.0	0.1	0.0	0.3	0.8	0.7	1.9	1.9	0.5	1.9	4.2	5.6	2.1	2.9	24.1
5.1- 8.0	0.1	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.5	0.1	0.5	2.7	4.9	5.1	1.2	16.1
8.1-10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3	1.6	1.4	1.2	0.0	4.7
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.2	1.5	0.7	0.0	3.7
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	1.8	1.2	1.0	1.1	1.4	2.4	1.9	1.6	2.4	2.3	2.0	4.0	5.2	5.2	5.1	2.5	
CALM	11.																
NO. HOURS	29.	24.	14.	11.	2.	20.	20.	25.	44.	58.	34.	38.	99.	124.	97.	88.	731.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 340001 YEAR: 1979 MONTH: 2

## WIND ROSE FREQUENCY TABLE

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.2	0.8	0.8	1.2	0.8	0.9	1.1	2.0	2.1	0.6	0.8	0.2	0.2	0.3	0.6	1.2	14.7
1.6- 3.0	1.2	0.8	1.4	2.1	1.8	1.2	1.1	2.9	4.4	1.4	0.2	0.6	0.5	0.2	1.4	1.2	22.4
3.1- 5.0	4.3	1.7	2.5	0.3	0.6	2.3	2.5	3.1	5.2	4.0	0.8	0.5	0.2	0.5	2.0	2.3	32.5
5.1- 8.0	1.5	0.2	0.0	0.0	0.6	4.4	3.2	1.1	1.5	1.2	0.5	0.2	0.0	0.2	1.7	3.7	19.9
8.1-10.0	0.5	0.0	0.0	0.0	0.2	1.2	1.7	0.9	0.0	0.0	0.2	0.0	0.3	0.0	0.6	2.6	8.1
10.1-14.0	0.0	0.0	0.0	0.0	0.5	0.6	0.3	0.3	0.0	0.0	0.0	0.0	0.2	0.0	0.5	0.2	2.5
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	3.9	2.8	2.8	1.9	4.0	5.7	5.4	3.7	3.1	3.7	3.5	3.3	5.0	3.3	4.5	5.7	
CALM	5.																
NO. HOURS	57.	22.	30.	24.	29.	70.	64.	67.	87.	47.	15.	9.	8.	7.	44.	73.	653.



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

SITE: 34CC01 YEAR: 1979 MONTH: 3

## WIND ROSE FREQUENCY TABLE

	DIR.	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																		
0.1- 1.5		1.1	1.5	1.0	1.2	1.1	1.0	1.9	2.9	3.6	2.5	0.6	1.1	0.4	0.6	0.7	0.7	21.7
1.6- 3.0		1.0	0.8	1.2	0.4	0.1	0.4	1.2	2.3	6.2	2.8	0.6	0.4	0.4	0.1	0.4	2.1	20.5
3.1- 5.0		2.8	2.5	1.5	0.6	0.8	0.6	1.5	2.5	4.1	3.2	0.7	0.8	1.4	0.8	1.8	4.5	30.0
5.1- 8.0		0.8	0.3	0.3	0.0	0.0	0.0	0.0	2.2	0.8	0.7	0.1	0.6	1.0	1.1	3.0	5.1	16.0
8.1-10.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.4	0.0	0.1	0.0	0.0	0.6	1.4	1.7	4.8
10.1-14.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	1.7	3.0	0.6	5.8
14.1-18.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	0.4	0.0	1.0
18.1-22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.3
OVER 22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED		3.3	2.9	2.8	1.7	2.2	2.2	2.4	3.7	2.8	2.8	3.3	3.1	4.9	8.3	8.1	5.4	
CALM		3.																
NO. HOURS		41.	37.	29.	16.	15.	14.	34.	78.	110.	66.	15.	21.	26.	40.	79.	106.	727.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASSBORO

AGENCY: NWS

PARAMETER: WIND ROSE UNITS: PERCENT DATE: MAR 1977

	DIR.			ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5		0.1	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.3	0.3
1.6- 3.0		1.7	0.4	0.5	0.9	1.5	1.6	1.5	0.5	1.3	0.3	1.3	0.9	3.1	2.0	2.3	1.7
3.1- 5.0		1.7	0.1	0.4	1.2	3.4	7.3	3.5	1.5	2.2	0.5	1.5	2.3	3.1	3.5	3.6	2.0
5.1- 8.0		1.5	0.	0.0	0.3	2.8	6.0	1.1	1.3	0.7	0.1	0.1	0.5	2.7	2.6	3.2	1.9
8.1-10.0		.5	.4	.1	0.0	0.1	0.7	0.3	0.0	0.0	0.0	0.0	0.4	1.1	1.1	1.3	0.7
10.1-14.0		.3	.5	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.3	0.3
14.1-18.0		0.1	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM		1.9	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
AV SPEED		4.7	1.	1.4	3.6	4.9	5.2	4.4	3.0	3.6	3.8	3.6	4.7	5.1	4.9	5.2	5.1
NO. HOURS		63.	41.	19.	18.	58.	116.	47.	25.	31.	7.	22.	31.	79.	72.	84.	51.

744.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS:

PERCENT

DATE: APR 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.1	0.0	0.0	0.3	0.0	0.4	0.4	0.6	0.8	0.0	0.4	0.3	0.7	0.7	0.3	0.4	5.4
1.6- 3.0	2.2	1.3	0.4	0.4	1.4	2.1	1.7	0.7	3.8	0.7	1.3	0.8	1.4	3.5	1.9	1.3	24.7
3.1- 5.0	0.8	1.1	0.7	0.7	1.9	9.9	2.4	1.1	1.8	0.1	1.0	1.5	2.1	1.3	4.2	2.1	32.6
5.1- 8.0	0.7	0.4	0.4	0.4	1.0	1.9	1.8	2.1	2.6	0.4	0.3	0.4	1.7	4.2	3.6	1.8	23.7
8.1-10.0	0.6	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.3	0.0	0.0	0.0	0.7	1.7	2.2	1.5	7.4
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.6	1.3	0.3	2.5
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5
AV SPEED	3.0	3.8	4.5	4.4	4.1	4.1	4.2	4.9	4.0	4.3	3.4	3.7	5.2	5.4	6.2	5.6	
NO. HOURS	57.	20.	11.	14.	31.	103.	46.	33.	67.	9.	21.	22.	50.	85.	98.	53.	720.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS:

PERCENT

DATE: MAY 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.3	0.0	0.1	0.1	0.4	0.1	0.1	0.1	0.3	0.0	0.0	0.5	0.4	0.1	0.1	0.1	3.0
1.6- 3.0	0.3	1.1	1.1	0.7	1.5	1.9	1.3	1.5	1.6	0.4	2.0	1.3	3.2	0.9	1.6	0.8	21.2
3.1- 5.0	1.1	0.9	1.1	1.7	3.2	4.0	2.6	1.3	1.9	1.6	1.9	1.7	4.3	2.0	2.8	0.8	33.1
5.1- 8.0	0.3	0.7	0.4	0.7	3.6	4.3	1.5	0.8	0.4	0.7	1.6	2.3	3.4	5.6	1.6	0.4	28.2
8.1-10.0	0.1	0.4	0.1	0.0	0.4	3.6	1.3	0.7	0.1	0.0	0.0	0.3	1.5	2.0	0.9	0.0	11.6
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.5	0.1	0.0	0.9
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0
AV SPEED	3.3	4.9	3.9	4.1	4.9	5.9	5.5	4.7	3.8	4.5	4.2	4.8	4.9	6.6	5.1	3.8	
NO. HOURS	30.	23.	21.	24.	68.	104.	52.	33.	32.	20.	41.	40.	96.	84.	54.	16.	744.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER: WIND ROSE UNITS: PERCENT DATE: JUNE 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.7	0.0	0.0	0.3	0.0	0.3	0.1	0.3	0.3	0.1	0.4	0.4	0.3	0.6	0.3	0.1	4.2
1.6- 3.0	1.4	0.3	1.3	1.4	1.3	2.8	1.3	0.3	1.7	0.6	0.1	1.8	2.6	1.4	1.4	2.1	21.5
3.1- 5.0	1.9	0.6	1.5	2.4	5.0	5.0	1.9	1.4	1.4	1.1	0.8	0.1	2.5	1.8	2.4	1.9	31.8
5.1- 8.0	1.4	1.5	0.7	0.8	2.8	7.8	1.7	1.0	0.4	0.0	0.0	0.0	0.8	4.6	3.5	1.0	27.9
8.1-10.0	1.4	0.0	0.4	0.0	1.5	2.4	1.3	0.0	0.0	0.0	0.0	0.0	0.1	1.1	1.3	0.1	9.6
10.1-14.0	0.4	0.0	0.3	0.0	0.3	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.3	0.3	2.5
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5
AV SPEED	4.2	5.1	5.0	3.9	5.5	5.7	5.5	4.6	3.5	3.7	3.1	2.4	3.7	5.8	5.7	4.5	
NO. HOURS	70.	17.	30.	35.	78.	134.	46.	21.	27.	13.	10.	17.	46.	71.	65.	40.	720.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

## AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER: WIND ROSE UNITS: PERCENT DATE: JULY 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.0	0.4	0.3	0.0	0.1	0.0	0.3	0.0	0.4	0.4	0.1	0.5	0.5	0.0	0.3	0.3	3.6
1.6- 3.0	1.9	0.9	0.4	0.5	0.4	1.5	0.9	1.5	1.3	0.5	0.3	2.2	2.8	2.7	1.1	1.9	20.8
3.1- 5.0	2.0	1.1	1.7	1.6	4.6	4.2	1.7	0.7	1.9	0.4	0.5	1.2	2.3	2.8	2.4	1.6	30.8
5.1- 8.0	1.6	0.9	0.5	0.5	2.0	4.7	2.8	3.0	1.3	0.5	0.1	0.3	3.2	5.1	4.6	1.9	33.2
8.1-10.0	0.3	0.0	0.0	0.0	0.1	0.8	0.3	0.3	0.0	0.0	0.0	0.0	1.1	1.6	1.3	0.8	6.6
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.7	1.1	2.7
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3
AV SPEED	3.8	4.0	4.1	4.6	4.7	5.4	5.1	5.2	4.1	3.8	3.4	3.2	5.2	5.8	6.5	5.3	
NO. HOURS	60.	25.	22.	20.	54.	83.	45.	40.	37.	14.	8.	31.	78.	96.	80.	51.	744.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: AUGU 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.8	0.5	0.1	0.3	0.0	0.1	0.1	0.3	0.1	0.1	0.4	0.5	0.3	1.2	0.8	0.5	6.3
1.6- 3.0	2.2	1.1	2.0	0.8	1.1	1.1	1.6	0.4	2.6	1.1	0.9	1.2	4.0	3.2	2.6	3.4	29.2
3.1- 5.0	2.3	0.8	2.4	3.2	7.1	4.2	1.6	1.2	0.5	0.5	0.5	0.9	2.7	3.4	4.0	2.6	38.0
5.1- 8.0	1.6	0.0	0.5	0.3	1.1	2.2	0.4	0.7	0.5	0.0	0.3	0.1	1.9	3.6	2.7	2.7	18.5
8.1-10.0	0.0	0.3	0.1	0.0	0.1	0.3	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.5	0.8	1.3	3.9
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.0	0.4	1.2
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
AV SPEED	3.4	3.5	3.8	3.9	4.3	4.7	3.6	4.2	3.6	3.1	3.2	2.9	4.1	4.9	4.6	5.1	
NO. HOURS	71.	20.	39.	34.	70.	58.	28.	19.	30.	13.	16.	21.	68.	94.	81.	82.	744.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: SEPT 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.4	0.1	0.4	0.0	0.6	0.1	0.1	0.4	0.4	0.3	0.4	0.3	0.7	0.6	0.1	0.0	5.0
1.6- 3.0	2.2	1.0	0.8	0.8	1.8	1.8	1.8	1.1	1.5	1.1	1.4	0.7	2.8	1.9	2.4	1.7	24.9
3.1- 5.0	2.4	1.1	2.6	3.1	6.3	8.3	2.2	1.1	0.8	0.4	1.1	0.1	1.4	3.3	1.9	1.7	37.9
5.1- 8.0	0.3	0.1	0.4	0.6	4.6	7.4	0.1	0.4	0.1	0.1	0.0	0.0	1.1	1.8	2.4	1.4	20.8
8.1-10.0	0.1	0.0	0.3	0.1	1.9	2.4	0.4	0.1	0.0	0.0	0.0	0.0	0.3	0.7	0.6	0.6	7.5
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.8
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.1
AV SPEED	2.5	3.4	4.2	4.3	5.3	5.7	3.9	3.7	3.0	2.9	3.1	2.4	3.8	4.6	4.9	4.8	
NO. HOURS	61.	17.	33.	33.	109.	149.	34.	23.	21.	14.	21.	8.	45.	60.	54.	38.	720.



MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES      AIR QUALITY BUREAU    HELENA, MONTANA  
 CITY: GLASGOW      AGENCY: NWS

PARAMETER:	WIND ROSE			UNITS:		PERCENT		DATE: OCT 1977												
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL			
SPEED																				
0.1- 1.5	0.0	0.3	0.4	0.0	0.1	0.3	0.0	0.3	0.7	0.0	0.0	0.9	0.5	0.5	0.3	0.3	4.6			
1.6- 3.0	1.7	0.7	0.8	0.9	0.5	2.0	0.8	1.1	0.9	1.5	1.6	1.6	3.1	2.0	2.4	2.2	23.9			
3.1- 5.0	0.7	0.1	0.5	0.9	4.3	9.8	2.6	1.3	1.7	0.8	1.9	1.5	2.7	2.4	2.0	1.6	34.9			
5.1- 8.0	0.1	0.0	0.4	0.8	2.4	7.0	1.9	1.2	0.5	0.3	0.5	1.1	1.9	2.2	2.2	1.6	24.1			
8.1-10.0	0.0	0.0	0.3	0.1	0.5	1.7	0.1	0.0	0.0	0.0	0.0	0.1	1.1	0.8	1.3	0.0	6.2			
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.1	1.9	0.0	3.6			
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
CALM	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7			
AV SPEED	2.2	2.3	4.0	4.5	5.0	5.3	4.7	4.3	3.7	3.3	3.8	3.7	4.7	5.7	6.4	4.3				
NO. HOURS	39.	8.	18.	21.	59.	157.	40.	29.	29.	19.	30.	39.	72.	67.	75.	42.	744.			

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES      AIR QUALITY BUREAU    HELENA, MONTANA  
 CITY: GLASGOW      AGENCY: NWS

PARAMETER:	WIND ROSE			UNITS:		PERCENT		DATE: NOV 1977											
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL		
SPEED																			
0.1- 1.5	0.3	0.1	0.1	0.3	0.1	0.4	0.4	0.4	0.3	0.1	0.0	0.3	0.7	0.4	1.1	0.4	5.6		
1.6- 3.0	0.7	0.1	1.1	0.7	1.8	1.8	2.1	0.8	1.9	1.0	1.3	1.9	4.7	2.6	2.2	2.2	27.1		
3.1- 5.0	0.7	0.1	0.1	1.0	3.8	4.6	1.3	0.7	1.1	0.6	0.7	1.1	2.8	3.1	3.1	1.7	26.3		
5.1- 8.0	1.8	0.3	0.0	0.1	2.2	6.3	0.7	0.0	1.3	0.3	0.4	0.1	3.1	2.1	2.1	1.8	22.5		
8.1-10.0	1.3	0.3	0.0	0.0	0.6	1.4	0.3	0.1	0.0	0.0	0.1	0.1	1.4	1.3	1.3	1.0	9.0		
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.8	0.8	0.7	0.6	3.3		
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.6	0.1	0.0	1.0		
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
CALM	5.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.1		
AV SPEED	4.4	3.7	2.4	3.4	4.8	5.7	3.9	3.4	3.9	4.0	4.0	3.3	5.2	5.9	5.3	5.2			
NO. HOURS	71.	7.	10.	15.	61.	106.	34.	15.	33.	15.	18.	26.	99.	78.	76.	55.	719.		

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: DEC 1977

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.3	0.0	0.3	0.3	0.4	0.0	0.3	0.1	0.3	0.0	0.7	0.4	0.7	0.1	1.1	0.8	5.6
1.6- 3.0	2.7	0.3	0.1	0.8	2.2	1.1	0.8	0.5	0.5	0.3	0.8	0.9	3.4	4.2	3.2	2.0	23.8
3.1- 5.0	1.2	0.3	0.1	1.1	2.7	2.0	0.8	0.0	0.0	0.3	0.1	0.5	2.3	2.4	5.0	2.4	21.2
5.1- 8.0	0.0	0.0	0.4	1.1	3.2	8.7	0.4	0.0	0.0	0.0	0.0	0.0	1.9	4.2	9.9	1.1	10.9
8.1-10.0	0.0	0.1	0.0	0.0	0.9	4.7	0.1	0.0	0.0	0.0	0.0	0.0	0.1	1.1	2.8	0.0	10.2
10.1-14.0	0.0	0.0	0.0	0.0	0.5	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	3.8
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	4.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4
AV SPEED	1.9	4.4	4.4	4.4	5.4	7.4	4.0	1.9	2.3	3.4	2.2	2.8	3.8	5.2	5.6	4.0	
NO. HOURS	64.	5.	7.	24.	74.	140.	18.	5.	6.	4.	12.	14.	62.	95.	165.	49.	744.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: JAN 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.4	0.0	0.4	0.4	0.0	0.4	0.0	0.0	0.4	0.0	0.4	1.2	0.4	1.2	0.4	0.0	5.0
1.6- 3.0	1.6	0.4	0.8	0.4	2.0	1.6	1.6	0.8	0.8	0.0	1.2	3.2	2.0	5.2	2.4	2.0	26.2
3.1- 5.0	0.4	0.0	1.2	0.0	4.4	8.1	0.8	0.4	0.4	0.0	0.0	0.4	0.0	1.2	3.6	2.8	24.6
5.1- 8.0	0.4	0.0	0.0	0.4	4.4	10.1	0.4	0.0	0.0	0.0	0.0	0.0	1.6	0.8	4.0	2.0	24.2
8.1-10.0	0.0	0.0	0.0	0.0	1.6	5.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.0	9.3
10.1-14.0	0.0	0.0	0.0	0.0	0.4	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	4.0
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
AV SPEED	2.1	2.0	2.8	3.3	5.3	6.5	3.5	3.2	2.6	0.0	2.3	2.3	4.0	3.3	5.3	5.3	
NO. HOURS	22.	1.	6.	3.	32.	70.	7.	3.	4.	0.	4.	12.	12.	22.	30.	20.	248.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER: WIND ROSE UNITS: PERCENT DATE: FEB 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.3	0.4	0.0	0.4	0.9	0.9	0.0	0.0	0.4	0.4	0.0	0.4	0.0	0.0	0.4	1.8	7.6
1.6- 3.0	0.4	0.9	0.9	1.3	0.9	1.3	0.9	1.3	0.4	0.9	0.0	0.9	1.8	1.8	4.0	3.1	21.0
3.1- 5.0	1.3	0.4	0.0	0.9	3.1	5.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.9	5.4	0.9	19.2
5.1- 8.0	0.0	0.0	0.0	0.9	2.7	7.1	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.2	0.9	15.2
8.1-10.0	0.0	0.0	0.0	0.0	3.1	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.2	0.0	8.5
10.1-14.0	0.4	0.0	0.0	0.0	0.9	15.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	17.9
14.1-18.0	0.0	0.0	0.0	0.0	0.0	2.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.7
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	8.0
AV SPEED	4.2	2.3	2.3	3.8	6.5	9.0	3.7	2.3	1.8	2.3	0.0	2.2	2.4	5.2	5.0	3.5	
NO. HOURS	26.	4.	2.	8.	26.	80.	3.	3.	2.	3.	0.	3.	5.	10.	33.	16.	224.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

## AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER: WIND ROSE UNITS: PERCENT DATE: MAR 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.8	0.4	0.0	0.0	0.0	0.8	0.0	0.8	0.0	0.8	0.4	0.0	0.8	0.4	0.4	1.2	6.9
1.6- 3.0	2.0	1.2	2.4	1.6	2.0	4.8	1.2	0.4	3.2	0.4	0.4	1.2	3.6	4.8	2.0	2.0	33.5
3.1- 5.0	1.2	0.0	1.6	2.0	4.0	7.3	1.6	0.0	0.4	0.0	0.4	1.2	2.0	0.8	4.4	1.6	28.6
5.1- 8.0	0.4	0.0	0.4	0.8	3.6	8.5	1.6	0.0	0.0	0.0	0.0	0.0	0.4	1.6	1.6	0.8	19.8
8.1-10.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	1.2	0.0	3.6
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.0	1.6
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0
AV SPEED	2.0	2.4	3.5	3.9	4.9	5.1	4.5	2.0	2.6	1.8	2.3	3.0	3.0	3.9	5.2	3.3	
NO. HOURS	26.	4.	11.	11.	24.	59.	11.	3.	9.	3.	3.	6.	17.	21.	26.	14.	248.

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES										AIR QUALITY BUREAU HELENA, MONTANA							
CITY: GLASGOW				AGENCY: NWS													
PARAMETER:	WIND ROSE			UNITS:		PERCENT		DATE: APR 1978									
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.8
1.6- 3.0	0.4	0.0	0.0	0.8	1.3	0.0	0.0	0.8	0.4	0.0	0.4	0.4	1.7	0.8	1.3	0.4	8.7
3.1- 5.0	0.0	0.4	1.3	1.7	5.4	5.8	0.8	0.4	0.0	0.0	0.0	1.3	2.5	2.5	1.3	0.8	24.2
5.1- 8.0	1.2	0.0	0.4	0.4	7.9	10.0	2.5	0.8	0.4	0.0	0.0	0.4	2.5	2.9	3.8	0.8	34.2
8.1-10.0	0.8	0.0	0.0	0.0	4.6	9.6	0.4	0.0	0.0	0.0	0.0	0.0	1.7	1.3	1.3	0.4	20.0
10.1-14.0	0.0	0.0	0.0	0.0	0.8	3.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	2.9	1.7	0.0	9.2
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	1.7
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
AV SPEED	4.9	4.0	4.3	3.9	6.7	7.7	6.8	4.3	4.3	0.0	1.8	3.9	6.6	7.8	8.0	5.3	
NO. HOURS	9.	1.	4.	7.	48.	69.	10.	5.	2.	0.	2.	5.	22.	26.	24.	6.	240.

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES										AIR QUALITY BUREAU HELENA, MONTANA									
CITY: GLASGOW				AGENCY: NWS															
PARAMETER:	WIND ROSE			UNITS:		PERCENT		DATE: MAY 1978											
DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL		
SPEED																			
0.1- 1.5	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.4	0.0	1.2	0.0	0.0	0.0	2.4		
1.6- 3.0	1.2	0.8	2.0	1.2	0.4	2.4	1.2	0.8	2.8	0.0	3.2	1.6	2.0	0.4	0.4	2.0	22.0		
3.1- 5.0	3.6	1.6	0.4	0.4	2.0	4.8	1.6	1.6	1.6	1.2	0.4	0.8	1.6	2.4	1.6	3.2	29.6		
5.1- 8.0	3.2	0.8	1.2	0.4	1.6	4.4	2.8	2.8	2.0	0.4	0.0	1.6	2.4	1.6	1.6	2.4	29.6		
8.1-10.0	0.8	1.2	1.6	0.0	0.8	0.0	0.0	0.4	0.4	0.0	0.0	0.4	0.0	1.2	2.8	0.4	10.0		
10.1-14.0	0.0	0.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.8	0.0	4.0		
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
CALM	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0		
AV SPEED	4.6	6.2	7.4	4.0	5.7	4.9	5.0	5.0	4.2	4.5	2.6	5.5	3.9	5.9	7.3	4.8			
NO. HOURS	27.	14.	18.	5.	12.	29.	14.	16.	17.	4.	10.	12.	18.	14.	18.	20.	248.		



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: JUN 1978

	DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																		
0.1- 1.5		0.4	0.4	0.0	0.8	0.0	0.8	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	1.7	6.3
1.6- 3.0		0.8	1.7	0.0	1.7	2.1	3.4	1.3	1.7	3.4	1.7	3.0	3.0	3.8	2.1	2.1	1.7	33.3
3.1- 5.0		0.4	0.0	0.4	0.4	3.4	4.6	4.6	3.8	1.3	0.8	1.3	1.7	3.6	5.9	3.8	2.1	38.4
5.1- 8.0		0.4	0.4	0.4	0.8	0.8	1.3	1.3	1.7	1.7	0.8	0.0	0.4	3.0	1.7	0.4	1.3	16.5
8.1-10.0		0.0	0.4	0.4	0.8	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.0	0.8	3.8
10.1-14.0		0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.8	0.0	1.7
14.1-18.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE SPEED		2.6	4.9	6.7	4.4	3.8	3.9	4.3	4.0	3.8	3.5	2.9	3.2	4.4	4.7	4.8	4.3	
ALM		3.0																
NO. HOURS		5.	8.	3.	11.	15.	24.	18.	17.	16.	9.	11.	13.	27.	25.	17.	18.	237.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: JUL 1978

	DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																		
0.1- 1.5			0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.8	0.0	2.1
1.6- 3.0		2.0	0.4	2.9	0.4	1.6	2.1	1.2	1.6	0.4	0.0	3.7	1.6	4.1	4.1	3.7	1.6	32.1
3.1- 5.0		1.2	1.2	2.1	1.2	3.3	7.8	1.2	0.8	1.2	0.8	2.5	0.4	3.3	3.7	3.3	5.3	39.5
5.1- 8.0		1.6	1.2	0.0	0.0	0.0	4.1	1.6	0.8	1.2	0.0	0.0	0.4	2.5	3.7	2.1	0.8	20.2
8.1-10.0		0.8	0.0	0.0	0.4	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.8	2.1	0.4	0.0	5.3
10.1-14.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.0	0.8
14.1-18.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AVERAGE SPEED		4.4	5.1	3.1	4.8	3.7	4.5	4.8	4.9	4.5	4.3	3.1	3.1	4.6	5.1	4.2	3.9	
ALM		5.0																
NO. HOURS		16.	7.	12.	5.	12.	34.	10.	10.	8.	2.	15.	7.	27.	33.	26.	19.	243.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS:

PERCENT

DATE: AUG 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4	0.4	0.8	0.0	0.4	0.8	3.3
1.6- 3.0	2.8	1.2	0.8	0.0	2.0	2.0	1.2	0.4	0.8	3.3	1.2	1.2	3.3	1.6	4.1	1.6	27.6
3.1- 5.0	1.6	0.8	1.2	1.6	2.4	7.7	4.5	0.8	1.6	0.4	0.0	1.2	4.1	4.9	4.1	3.7	40.7
5.1- 8.0	1.2	0.0	0.0	0.0	0.8	4.9	0.8	0.0	0.8	0.0	1.2	0.4	2.4	4.5	3.3	3.7	23.6
8.1-10.0	0.0	0.0	0.4	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.4	0.4	2.8
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.4	0.4	0.0	1.6
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	4.1	2.7	4.3	4.9	4.0	5.1	4.2	3.1	4.0	2.7	3.9	5.0	4.1	5.3	4.8	4.6	
CALM	2.0																
NO. HOURS	14.	5.	6.	5.	13.	38.	17.	4.	8.	9.	7.	10.	26.	29.	31.	24.	246.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS:

PERCENT

DATE: SEP 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.0	0.4	0.0	0.0	0.4	0.0	0.0	0.0	0.9	0.4	0.9	0.0	0.0	0.0	0.0	0.9	3.9
1.6- 3.0	0.9	0.0	0.9	0.0	0.4	2.1	0.4	1.7	1.7	2.6	0.4	1.7	1.7	1.3	1.7	0.4	18.0
3.1- 5.0	1.3	0.9	0.0	0.9	6.4	7.3	4.3	0.9	2.1	0.4	1.3	1.7	3.0	2.6	1.7	1.7	36.5
5.1- 8.0	0.4	0.4	0.9	1.3	1.7	3.4	1.3	0.9	1.3	0.0	0.0	1.3	2.1	4.3	2.6	2.1	24.0
8.1-10.0	0.4	0.9	2.6	0.4	0.9	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.9	0.9	2.6	0.0	10.3
10.1-14.0	0.4	0.4	1.7	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.7	1.3	0.0	0.0	6.0
14.1-18.0	0.0	0.0	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	5.8	6.9	9.1	9.2	4.9	4.9	5.2	3.8	3.6	2.8	2.8	4.1	6.2	6.4	6.2	4.7	
CALM	7.0																
NO. HOURS	8.	7.	15.	9.	23.	31.	15.	8.	14.	8.	6.	11.	22.	24.	20.	12.	233.

STATION: GLASGOW

AGENCY: NWS

PARAMETER: WIND ROSE UNITS: PERCENT DATE: OCT 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
WIND SPEED																	
1- 1.5	0.4	0.0	0.4	0.0	0.0	0.0	0.4	0.4	1.7	0.4	0.0	0.4	0.0	0.4	1.3	0.0	5.8
6- 3.0	1.2	0.4	1.3	0.8	0.4	3.3	1.3	1.7	2.9	0.8	1.3	1.3	3.8	2.9	5.4	2.9	31.7
1- 5.0	0.8	0.4	0.0	0.0	1.7	4.2	1.7	2.1	2.9	0.8	1.7	1.3	3.8	3.3	2.9	3.3	30.8
1- 8.0	0.0	0.0	0.0	0.0	0.0	3.8	0.8	0.8	0.8	0.0	0.0	0.4	2.5	1.7	4.6	2.5	17.9
1-10.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	3.8	3.8	0.0	8.3
1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	4.2	0.4	5.0
1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
R 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WIND SPEED	3.4	3.0	2.4	2.3	4.1	4.5	4.0	3.7	3.2	2.9	3.5	3.4	4.4	6.1	6.5	4.7	
WIND	8.0																
HOURS	7.	2.	4.	2.	5.	27.	10.	12.	20.	5.	7.	8.	25.	31.	53.	22.	240.

STATION: GLASGOW

AGENCY: NWS

PARAMETER: WIND ROSE UNITS: PERCENT DATE: NOV 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
WIND SPEED																	
1- 1.5	0.4	0.4	0.0	0.9	0.9	0.0	0.4	0.4	0.4	0.0	0.0	0.9	0.0	0.0	0.4	0.4	5.8
6- 3.0	2.7	0.0	1.8	0.9	4.0	4.0	0.4	2.2	0.4	0.9	0.9	2.2	3.6	1.8	3.6	2.2	31.8
1- 5.0	1.8	0.4	0.0	0.0	5.4	6.3	0.9	0.0	0.0	0.0	0.4	1.8	1.8	2.7	1.3	1.8	24.7
1- 8.0	3.1	0.9	0.4	0.0	0.4	8.1	0.4	0.0	0.4	0.4	0.0	0.0	1.8	2.2	4.9	2.7	26.0
1-10.0	0.9	0.9	0.4	0.0	0.0	2.7	0.4	0.0	0.0	0.0	0.0	0.0	0.4	1.8	1.3	0.4	9.4
1-14.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	1.3
1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.4
R 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WIND SPEED	4.5	7.4	3.9	2.0	3.4	5.4	4.5	2.3	3.8	4.5	2.7	3.2	5.5	6.1	5.1	4.7	
WIND	17.0																
HOURS	20.	8.	6.	4.	24.	47.	6.	6.	3.	3.	3.	11.	19.	20.	26.	17.	223.

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: DEC 1978

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	1.3	0.0	0.0	0.0	0.9	0.0	0.0	0.0	0.9	0.4	0.4	0.0	0.0	1.3	0.4	0.4	6.0
1.6- 3.0	1.3	0.4	0.9	1.3	1.3	1.3	2.6	0.4	0.0	0.9	0.4	4.3	5.1	1.7	3.0	3.0	27.7
3.1- 5.0	0.4	0.4	0.9	0.4	3.4	4.7	0.0	0.0	0.0	0.0	0.4	0.9	5.5	3.8	5.1	1.3	27.2
5.1- 8.0	0.4	0.0	0.4	0.4	1.3	4.7	0.4	0.0	0.0	0.0	0.4	0.0	6.0	4.3	4.3	2.1	24.7
8.1-10.0	0.0	0.0	0.0	0.9	0.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.7	3.8	0.9	9.4
10.1-14.0	0.0	0.0	0.0	0.0	1.3	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	2.1	0.0	4.7
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	2.8	3.3	4.3	5.1	5.5	5.9	2.9	3.0	1.5	2.2	3.5	2.8	4.7	6.0	6.1	4.6	
CALM	12.0																
NO. HOURS	8.	2.	5.	7.	20.	28.	7.	1.	2.	3.	4.	12.	41.	33.	44.	18.	235.

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: JAN 1979

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
SPEED																	
0.1- 1.5	0.4	0.0	0.4	0.0	0.4	0.4	0.4	0.9	0.0	0.9	0.9	0.4	2.7	0.4	0.9	0.9	10.3
1.6- 3.0	5.4	0.9	1.8	1.3	2.2	2.2	0.9	0.4	0.0	0.4	1.8	1.3	5.8	5.4	6.7	5.8	42.4
3.1- 5.0	0.9	0.4	0.4	0.0	2.7	6.3	0.0	0.0	0.0	0.0	0.0	0.0	3.1	2.7	6.9	2.7	28.1
5.1- 8.0	0.0	0.0	0.0	0.0	0.4	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.8	4.5	2.7	13.4
8.1-10.0	0.4	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.8	0.0	5.8
10.1-14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
14.1-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
18.1-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
OVER 22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
AV SPEED	2.6	3.0	2.6	2.2	3.4	5.3	2.5	1.7	0.0	2.0	2.1	1.9	2.9	4.1	4.4	3.5	
CALM	24.0																
NO. HOURS	16.	3.	6.	3.	13.	32.	3.	3.	0.	3.	6.	4.	28.	26.	51.	27.	224.



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

UNITS: PERCENT

DATE: FEB 1979

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
WIND SPEED																	
1- 1.5	0.5	0.0	0.0	0.5	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.9	0.0	0.5	0.0	0.5	3.2
6- 3.0	2.8	0.9	0.5	1.4	1.4	2.3	3.2	0.9	0.5	0.5	0.0	0.0	1.4	1.4	1.4	2.3	20.6
11- 5.0	4.1	0.9	0.5	0.5	2.8	12.4	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	1.4	2.3	30.7
16- 8.0	1.4	0.0	0.5	0.5	4.1	17.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	4.1	30.7
21-10.0	1.4	0.0	0.0	0.0	0.5	5.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.9	0.9	9.2
26-14.0	0.5	0.0	0.0	0.0	0.9	3.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	5.5
31-18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
36-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41-22.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WIND SPEED	4.9	3.0	3.8	3.1	5.9	6.5	3.5	2.2	2.0	2.0	0.0	1.5	3.6	2.9	5.2	5.5	
WIND MAX	6.0																
HOURS	23.	4.	3.	6.	21.	89.	19.	3.	1.	1.	0.	2.	4.	6.	13.	23.	218.

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

AIR QUALITY BUREAU HELENA, MONTANA

CITY: GLASGOW

AGENCY: NWS

PARAMETER:

WIND ROSE

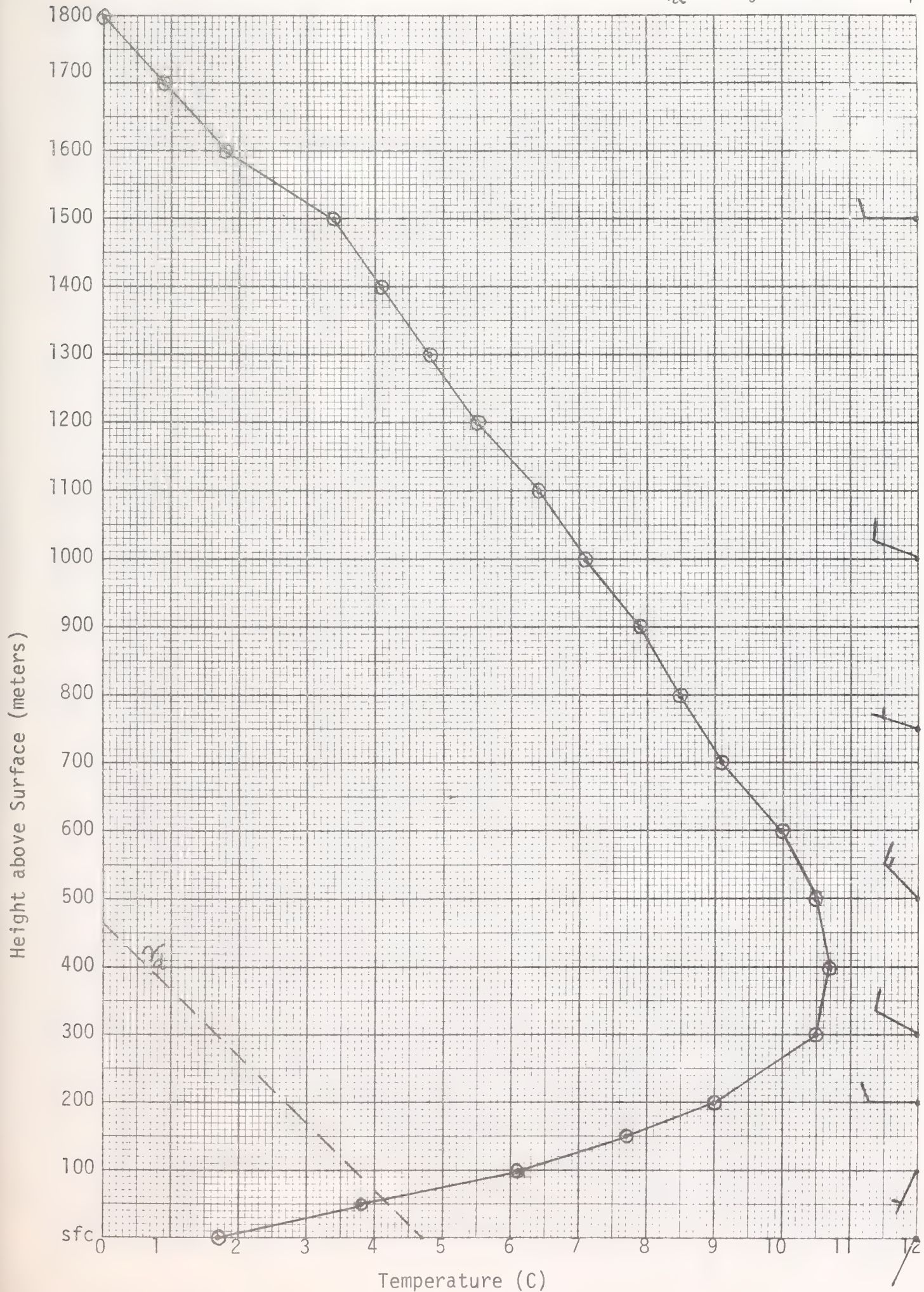
UNITS: PERCENT

DATE: MAR 1979

DIR	N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	TOTAL
WIND SPEED																	
1- 0.5	0.4	0.0	0.0	0.0	1.2	0.4	0.0	0.0	0.8	0.0	0.0	0.4	0.0	0.4	0.8	1.7	6.2
6- 1.0	1.9	1.0	0.8	0.8	2.5	6.6	5.4	0.4	1.2	0.0	0.4	0.0	2.5	1.2	2.9	4.5	33.5
11- 1.5	1.7	1.7	1.2	1.7	1.2	12.4	1.2	0.0	0.0	0.4	0.4	0.4	1.2	0.8	3.3	1.2	28.9
16- 2.0	1.7	0.4	1.2	0.4	2.1	7.9	1.7	0.8	0.0	0.0	0.0	0.0	0.0	1.7	2.5	1.2	21.5
21- 2.5	0.5	0.0	0.0	0.0	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.1	1.2	5.4
26- 3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	2.1	3.7
31- 3.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.4
36- 4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
41- 4.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WIND SPEED	4.2	3.0	4.5	4.0	3.6	4.3	4.1	5.2	2.1	5.0	3.5	2.5	3.0	7.0	5.5	5.4	
WIND MAX	6.0																
HOURS	10.	0.	8.	7.	17.	66.	22.	3.	5.	1.	2.	2.	9.	14.	31.	29.	242.



April 1977  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

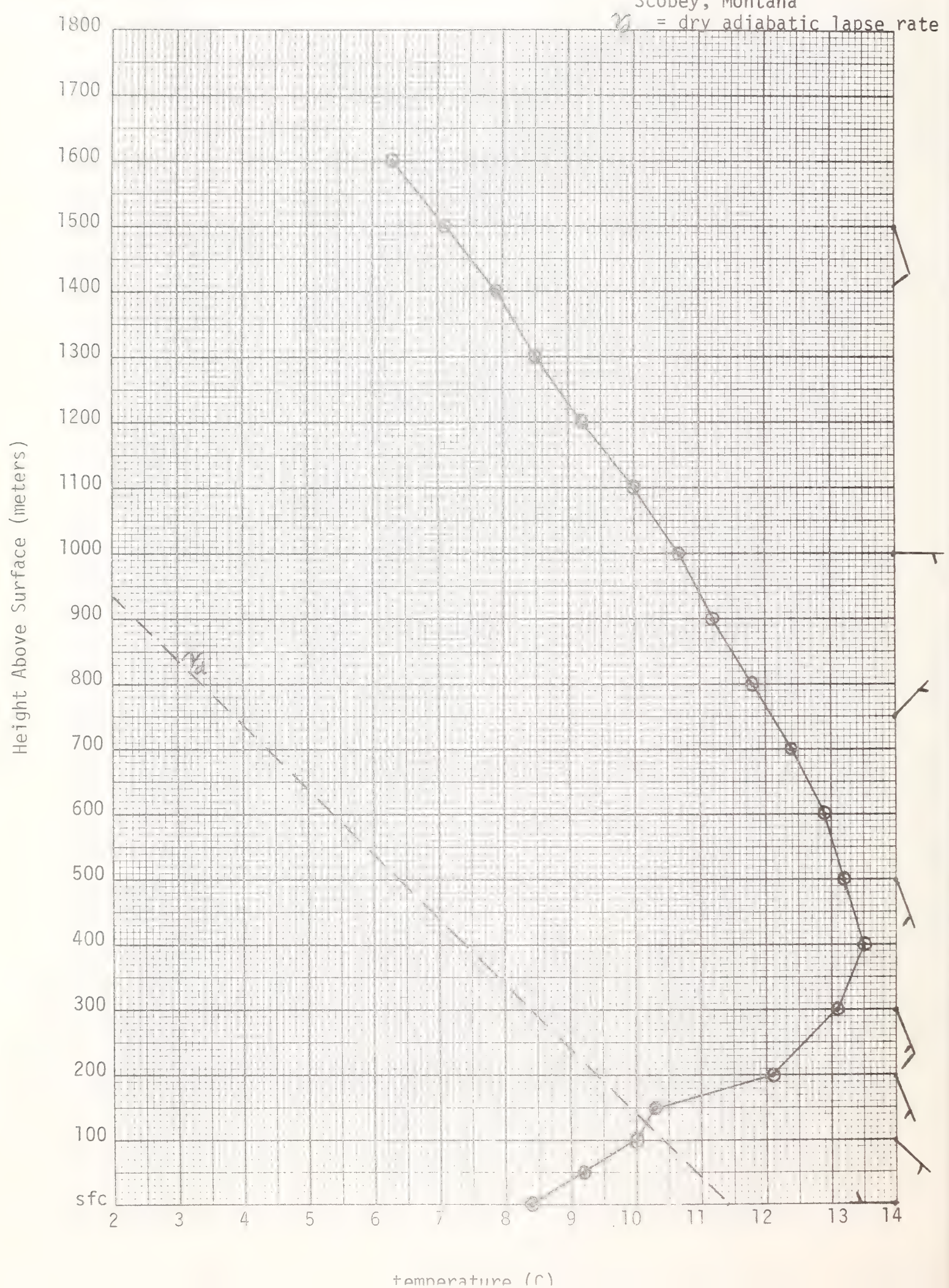




May 1977  
Morning Monthly Average

Upper Air Sounding  
Scobey, Montana

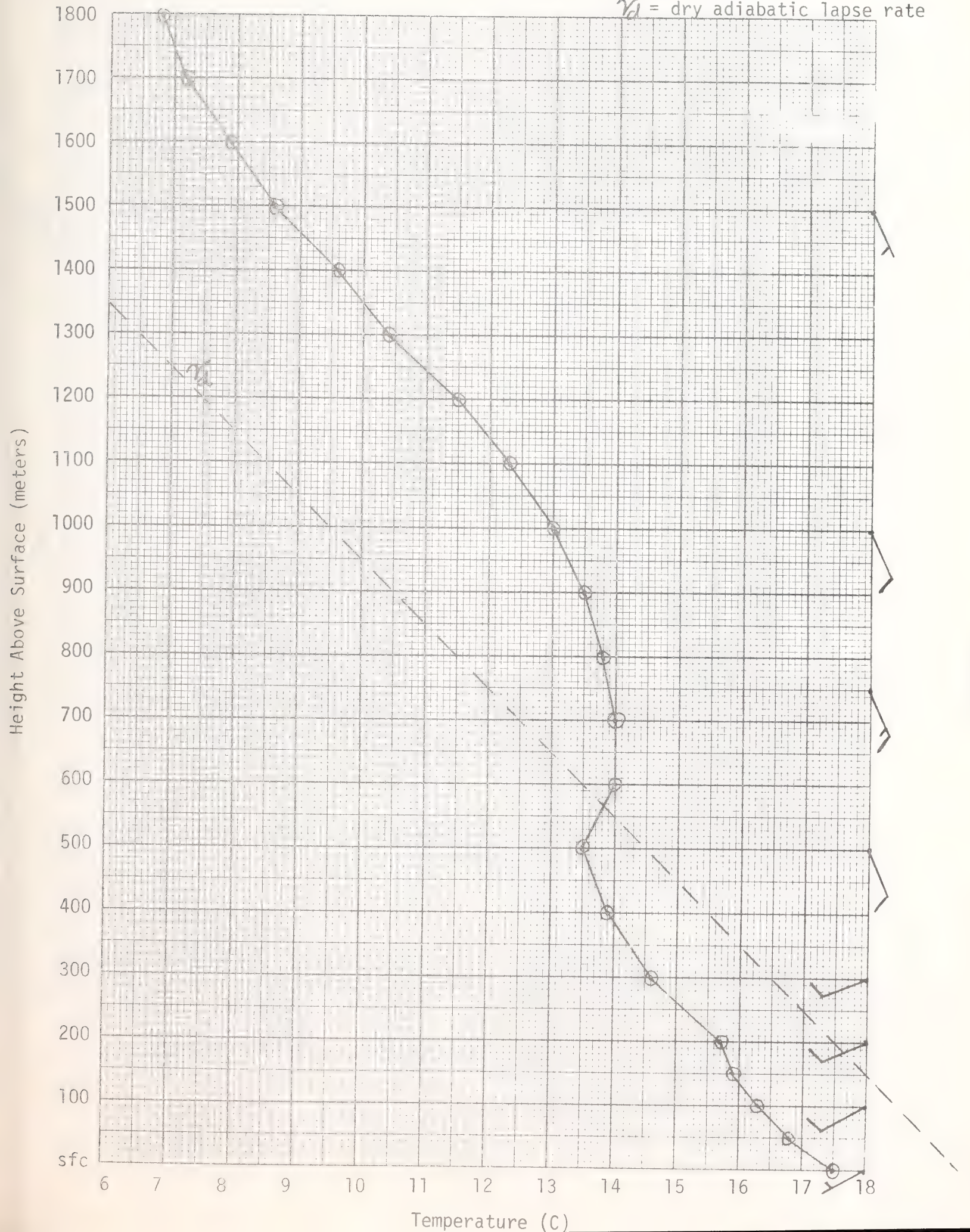
$\gamma_d$  = dry adiabatic lapse rate



temperature (C)



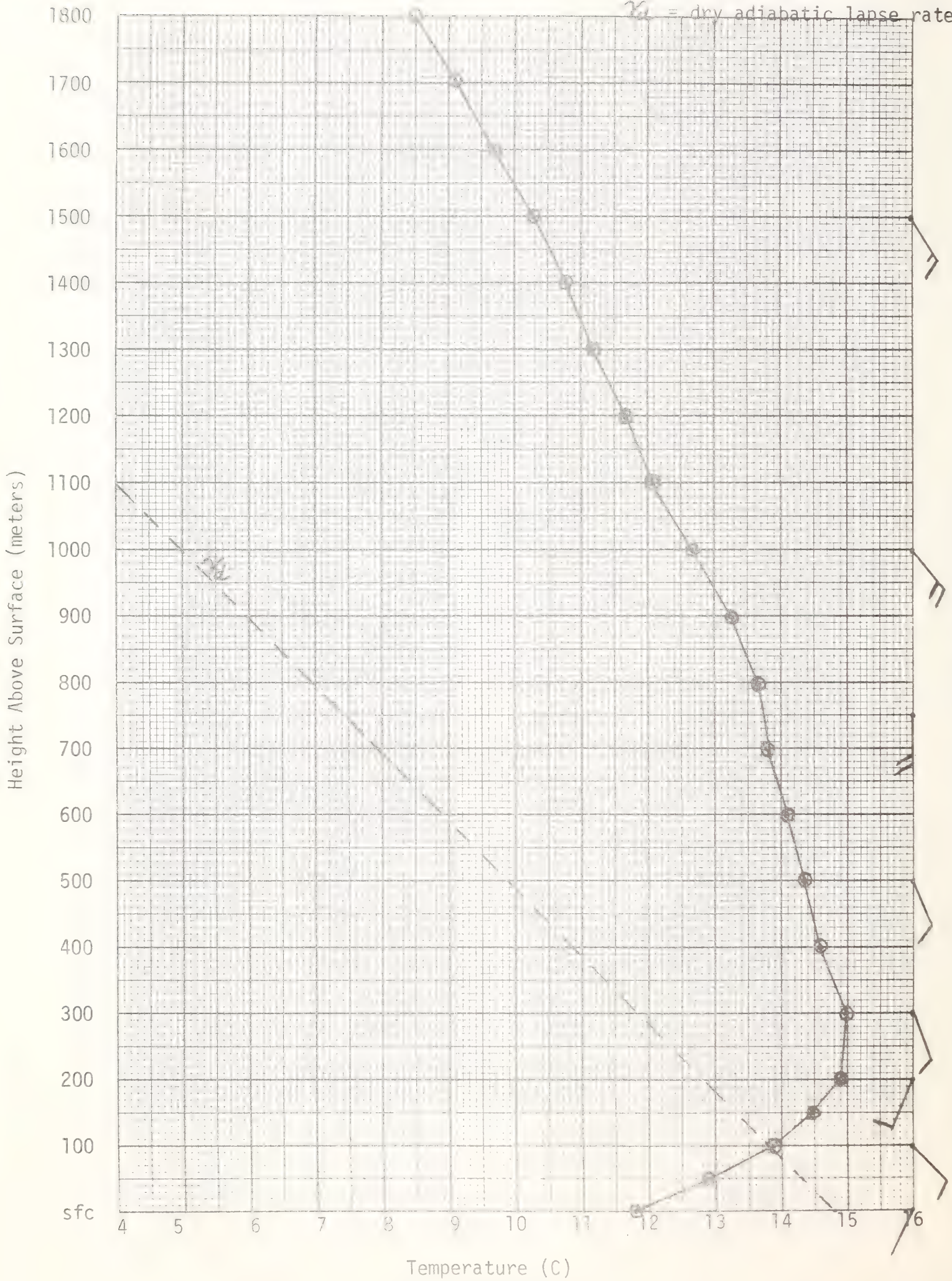
May 1977  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





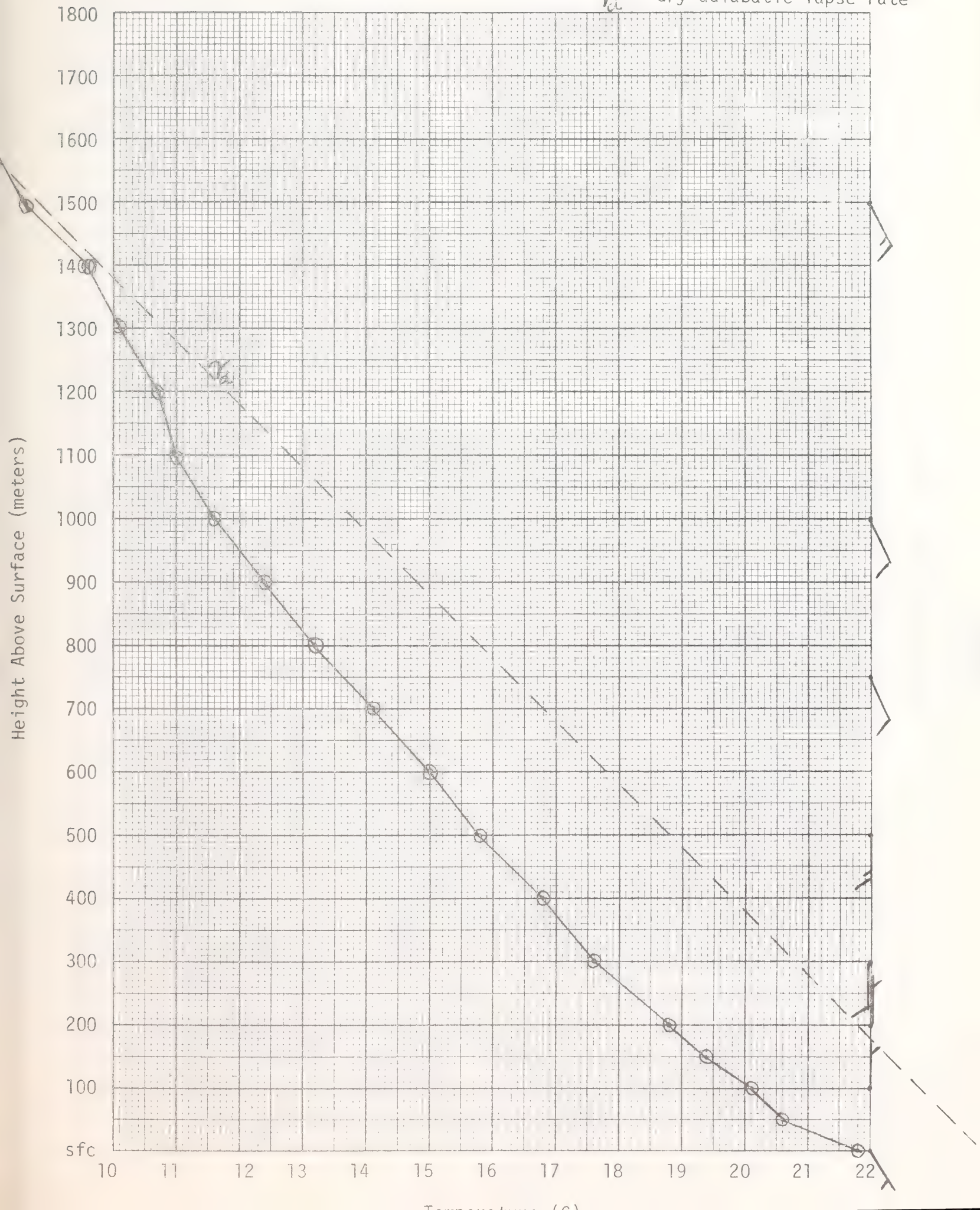
June 1977  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana

$\gamma_d$  = dry adiabatic lapse rate



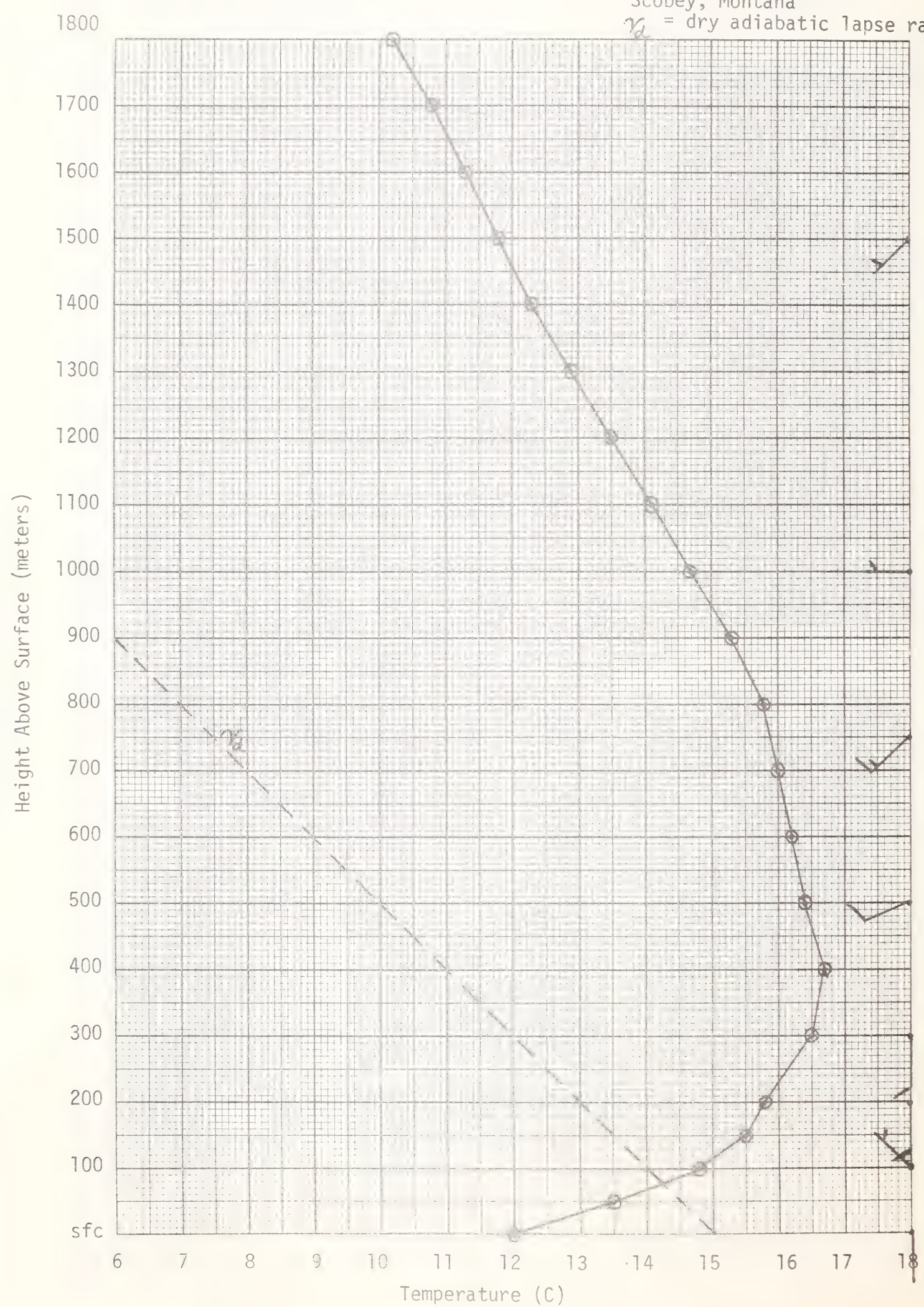


June 1977  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



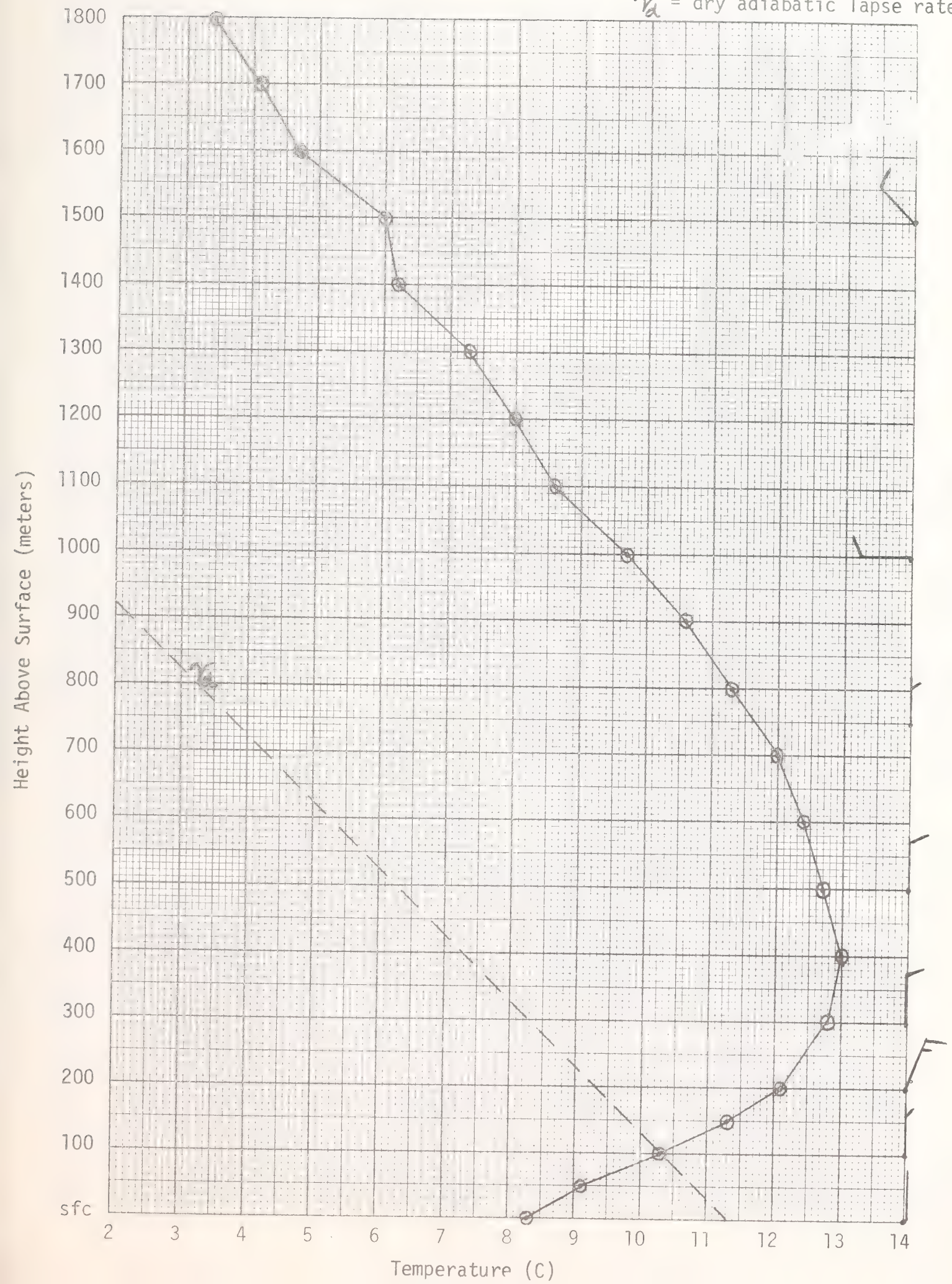


July 1977  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



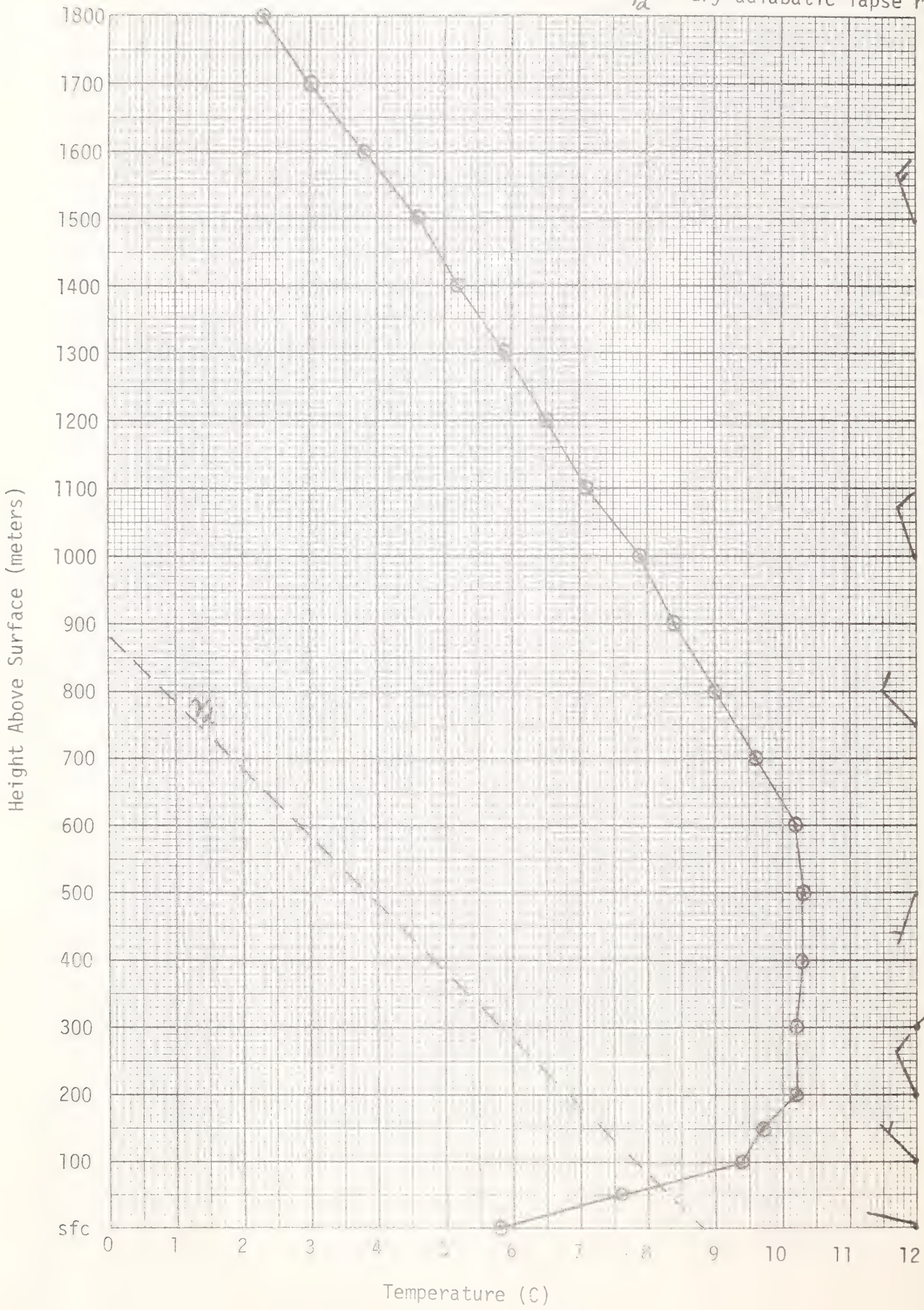


August 1977  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



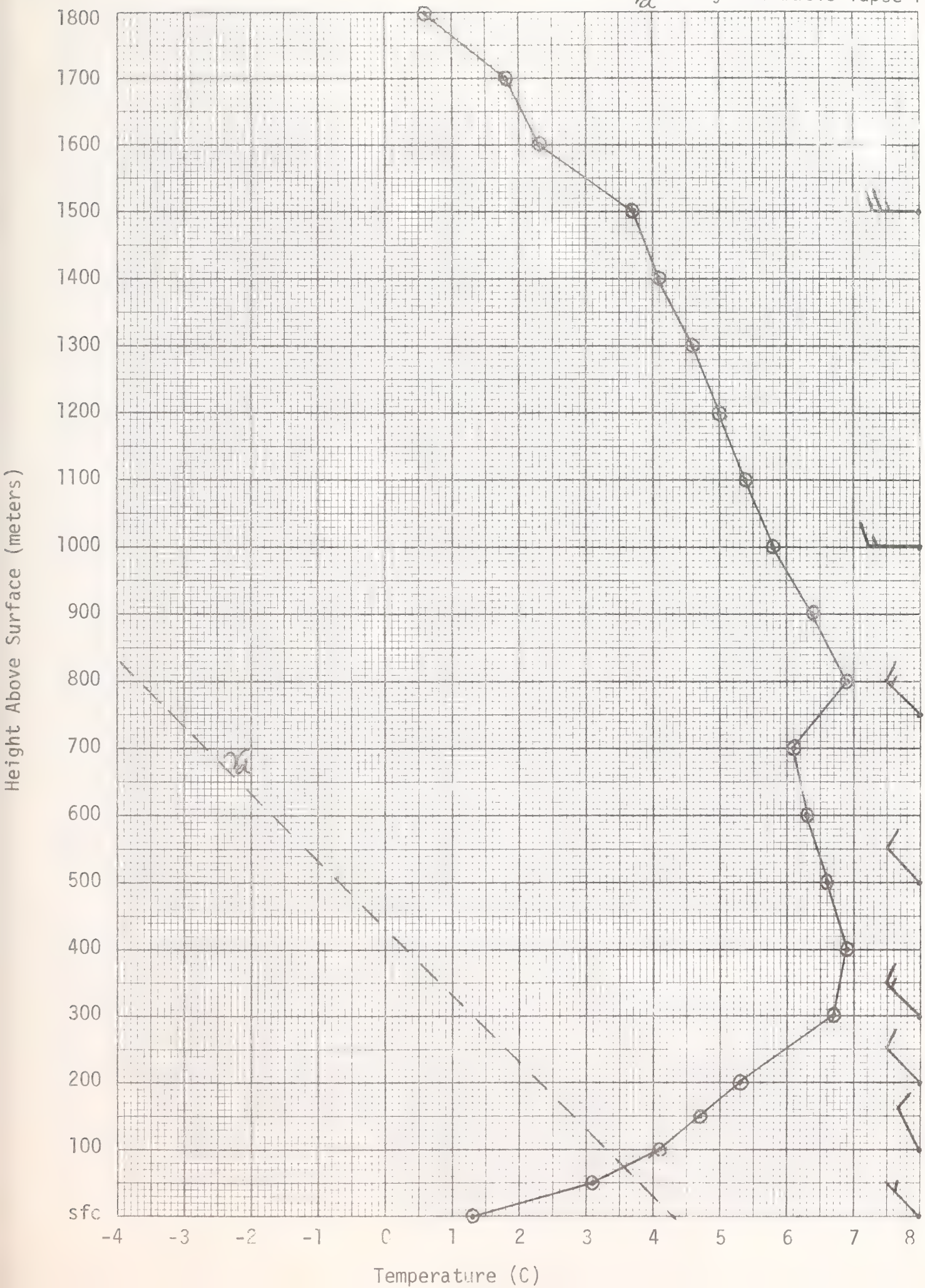


September 1977  
 Morning Monthly Average  
 Upper Air Sounding  
 Scooby, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





October 1977  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



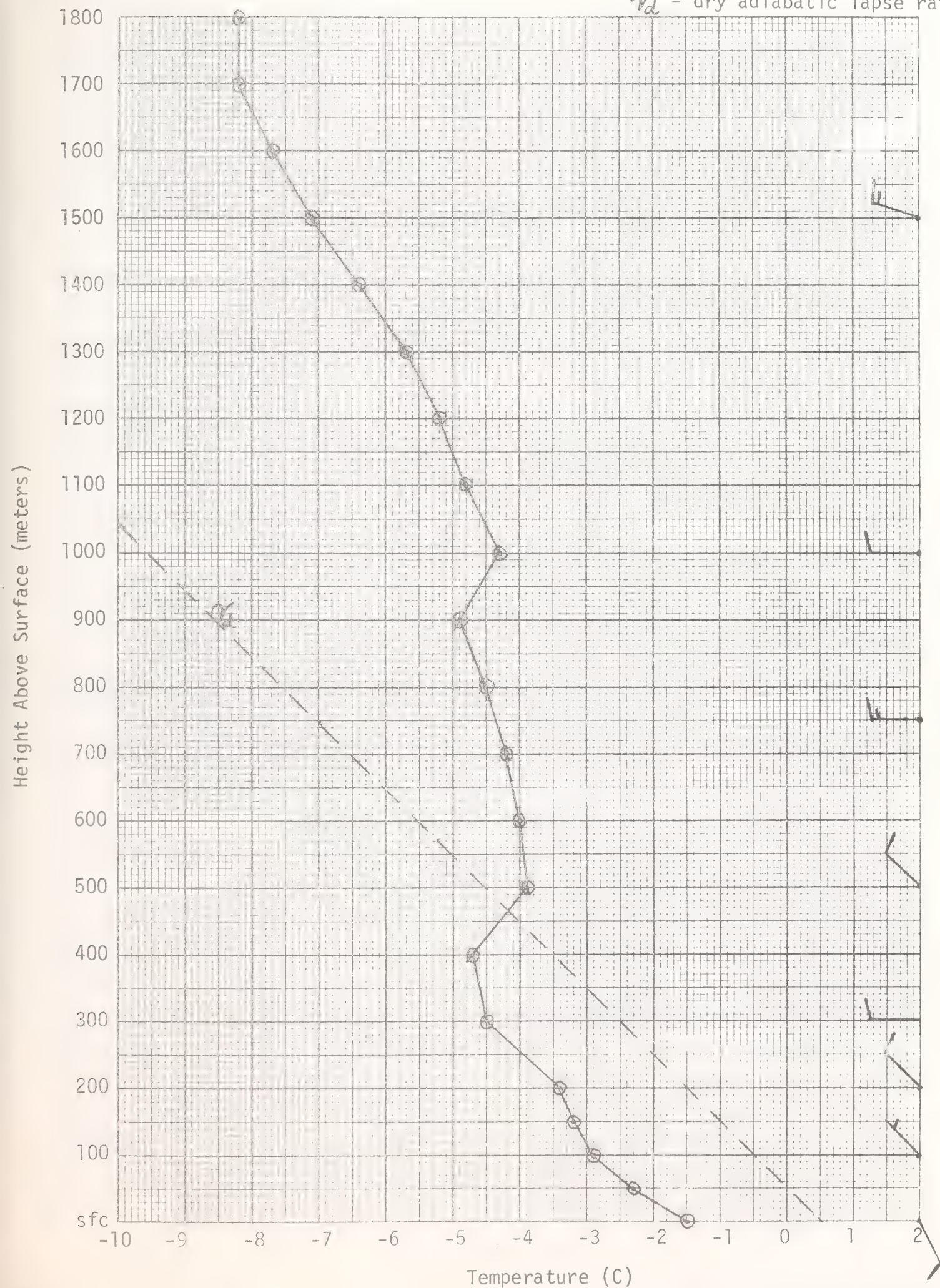


November 1977  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



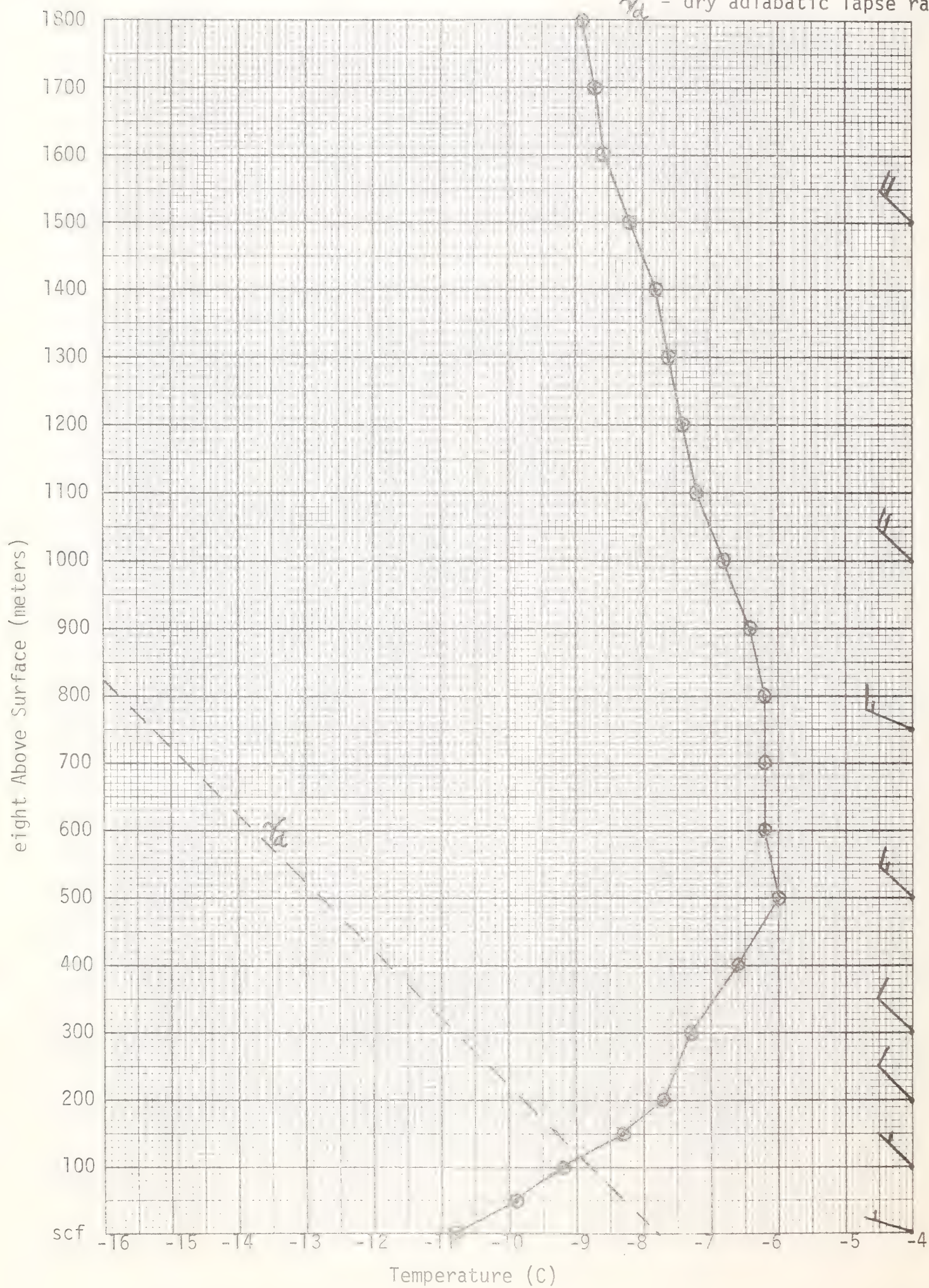


November 1977  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





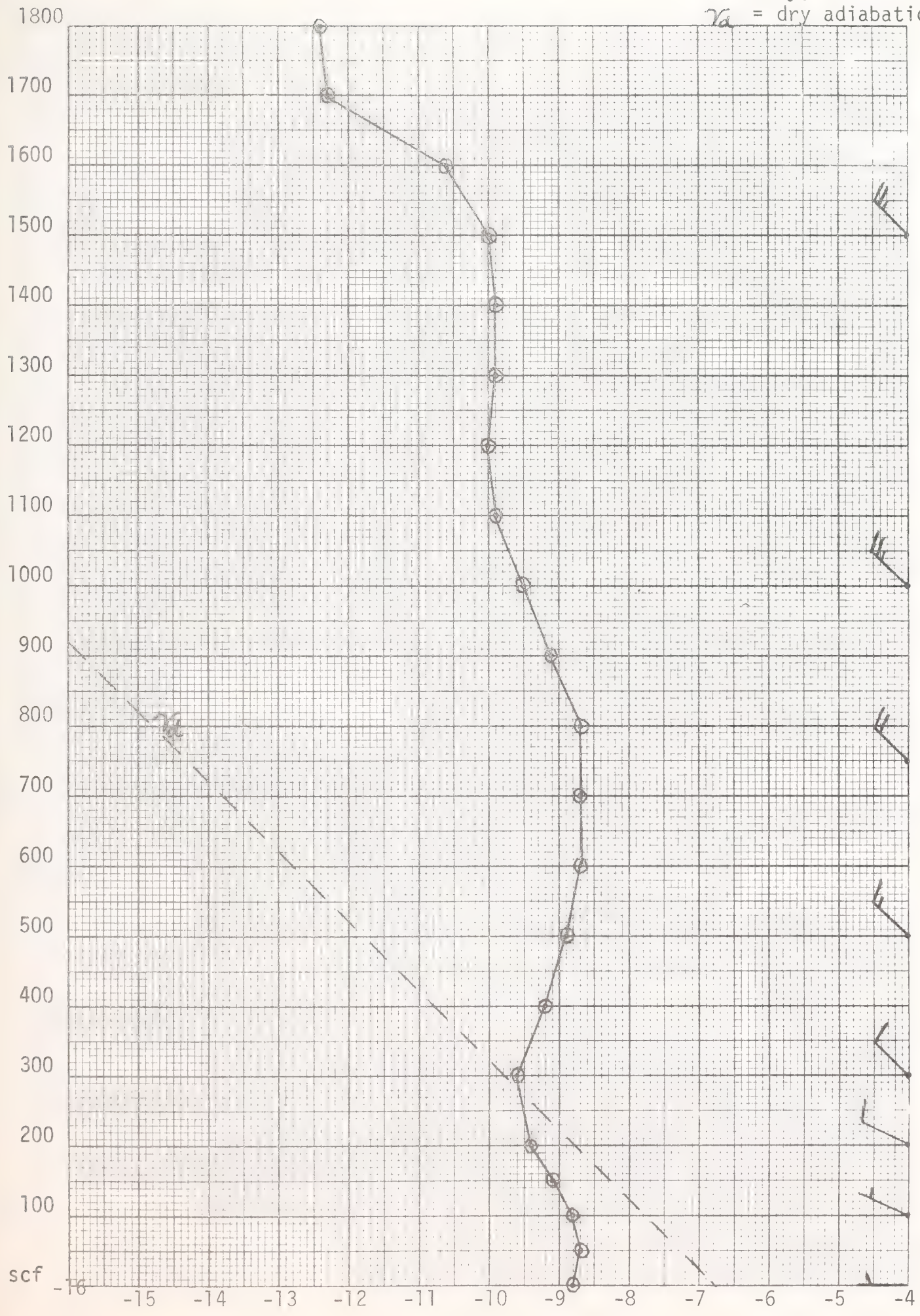
December 1977  
 Morning Monthly Average  
 Upper Air Sounding  
 Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





December 1977  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_a$  = dry adiabatic lapse ra

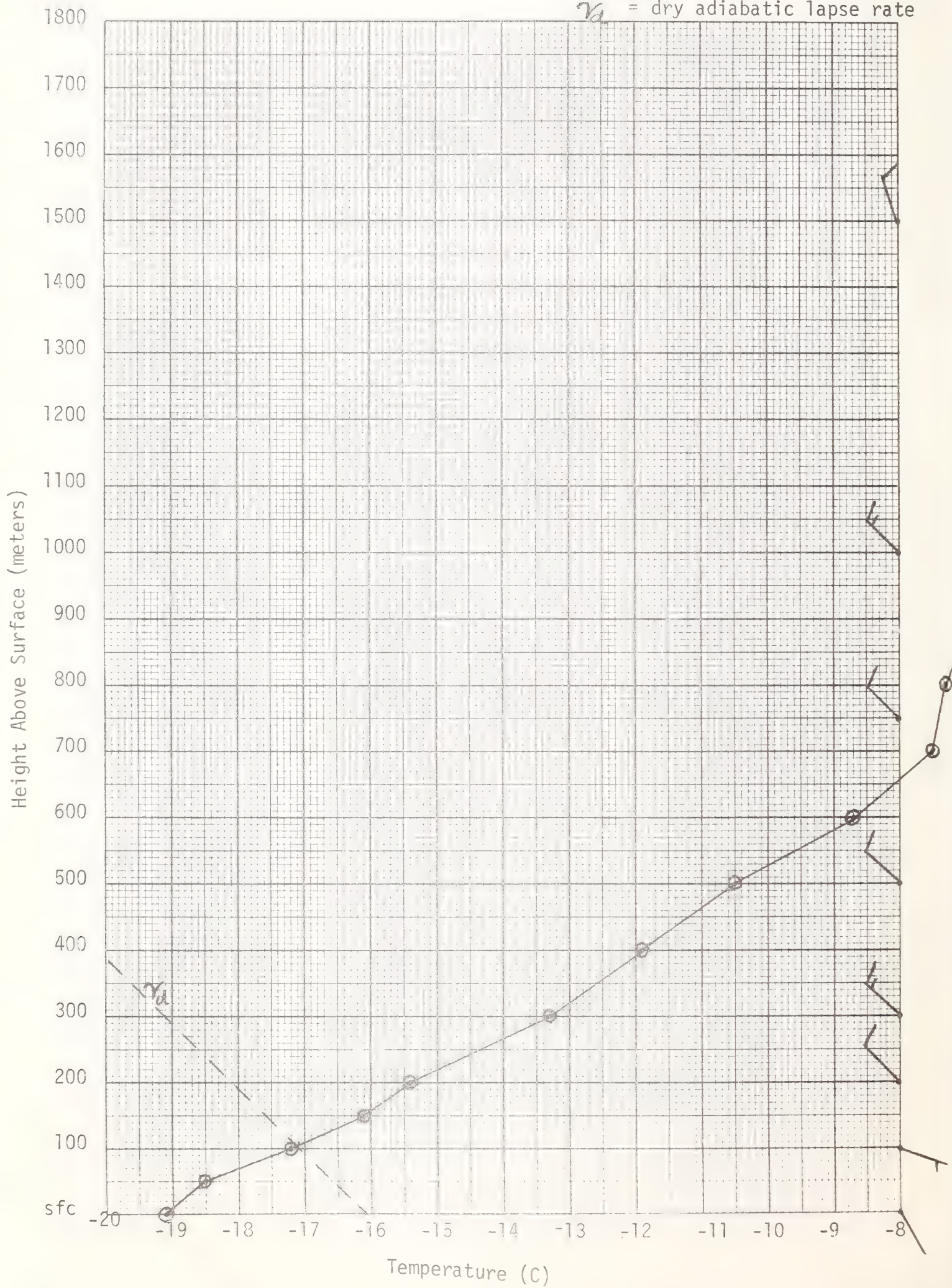
Height Above Surface (meters)





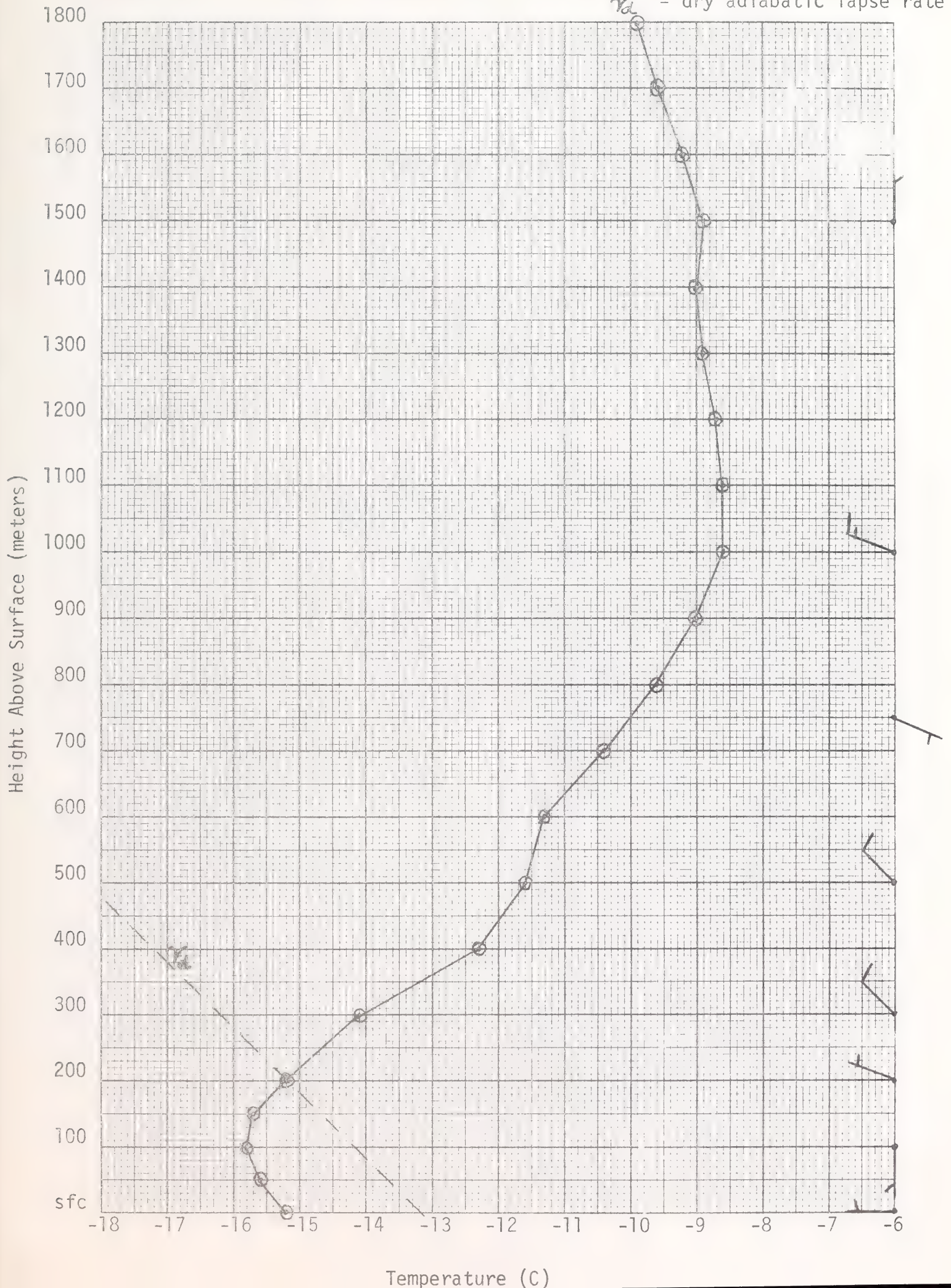
January 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana

$\gamma_d$  = dry adiabatic lapse rate





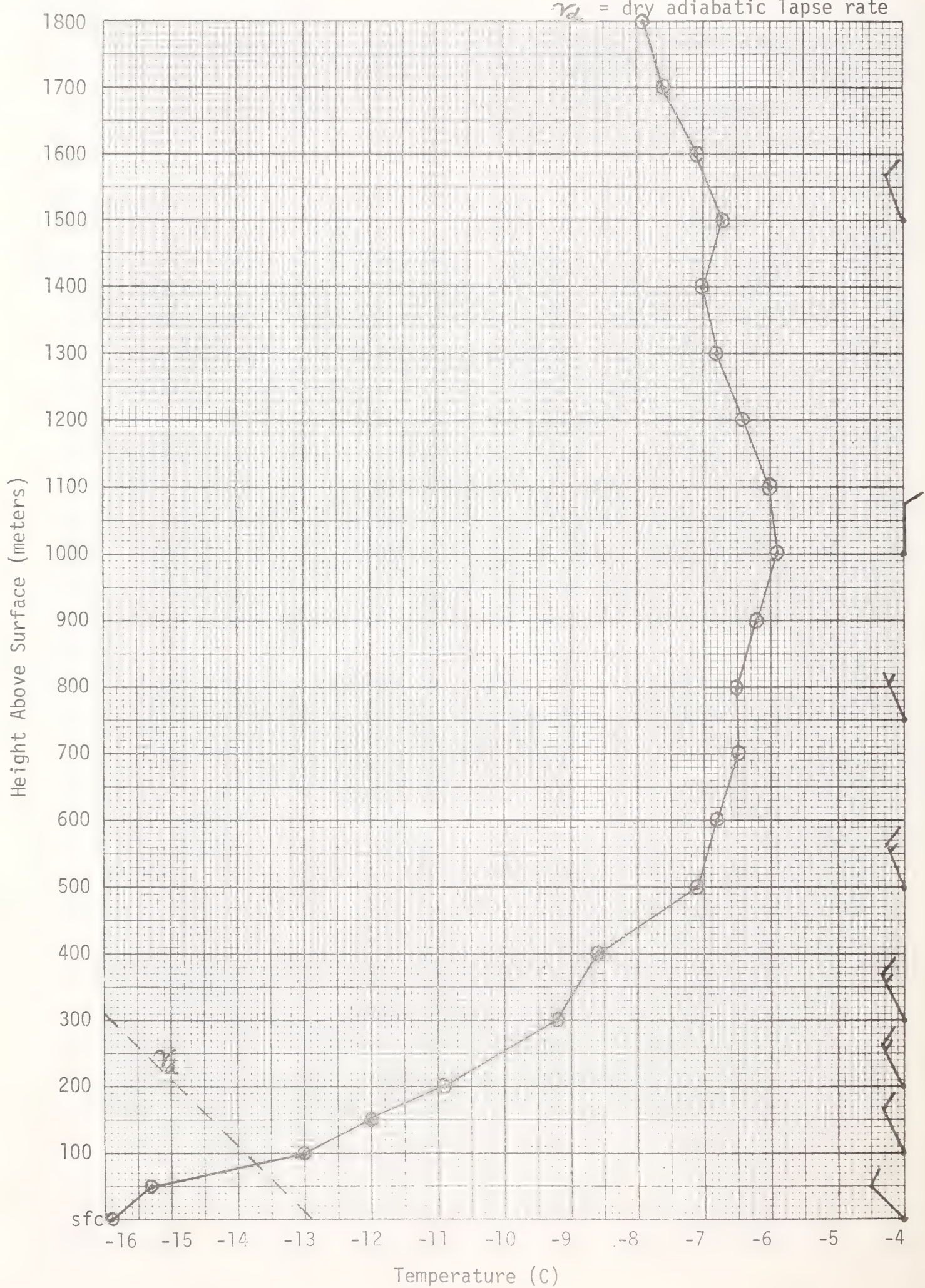
January 1978  
Afternoon Monthly average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





February 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana

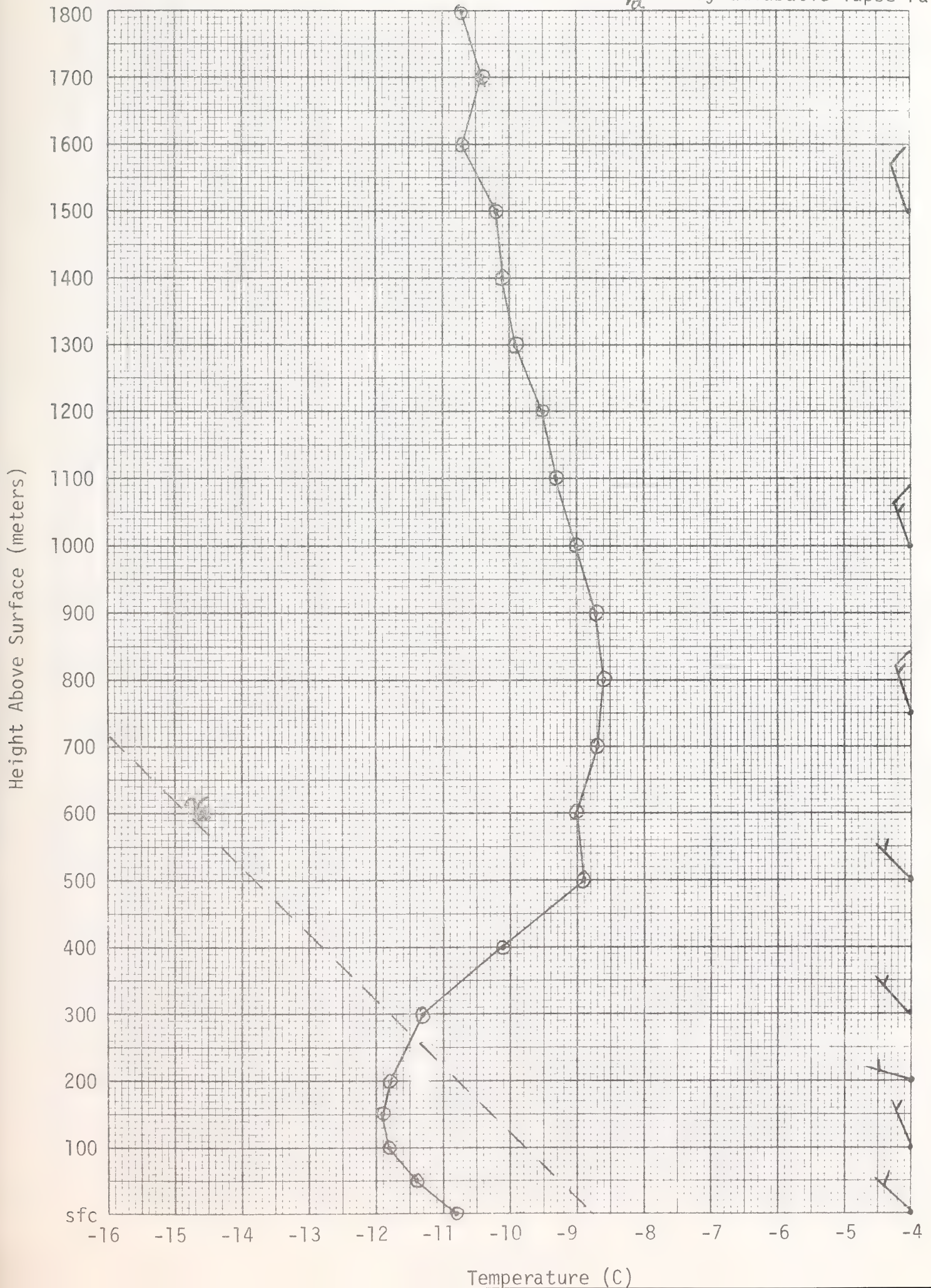
$\gamma_d$  = dry adiabatic lapse rate



TECHNICAL CHARTS

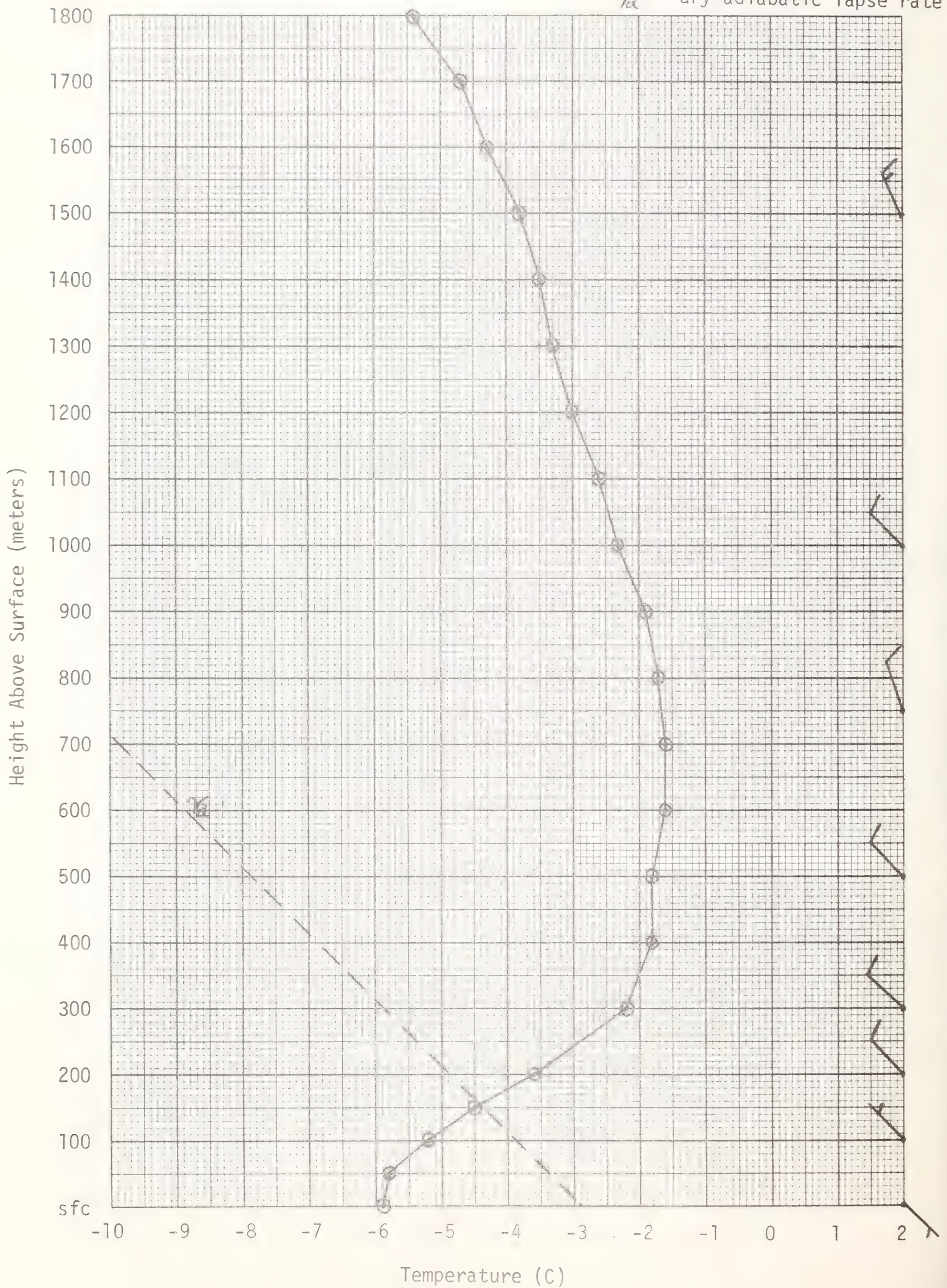


February 1978  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



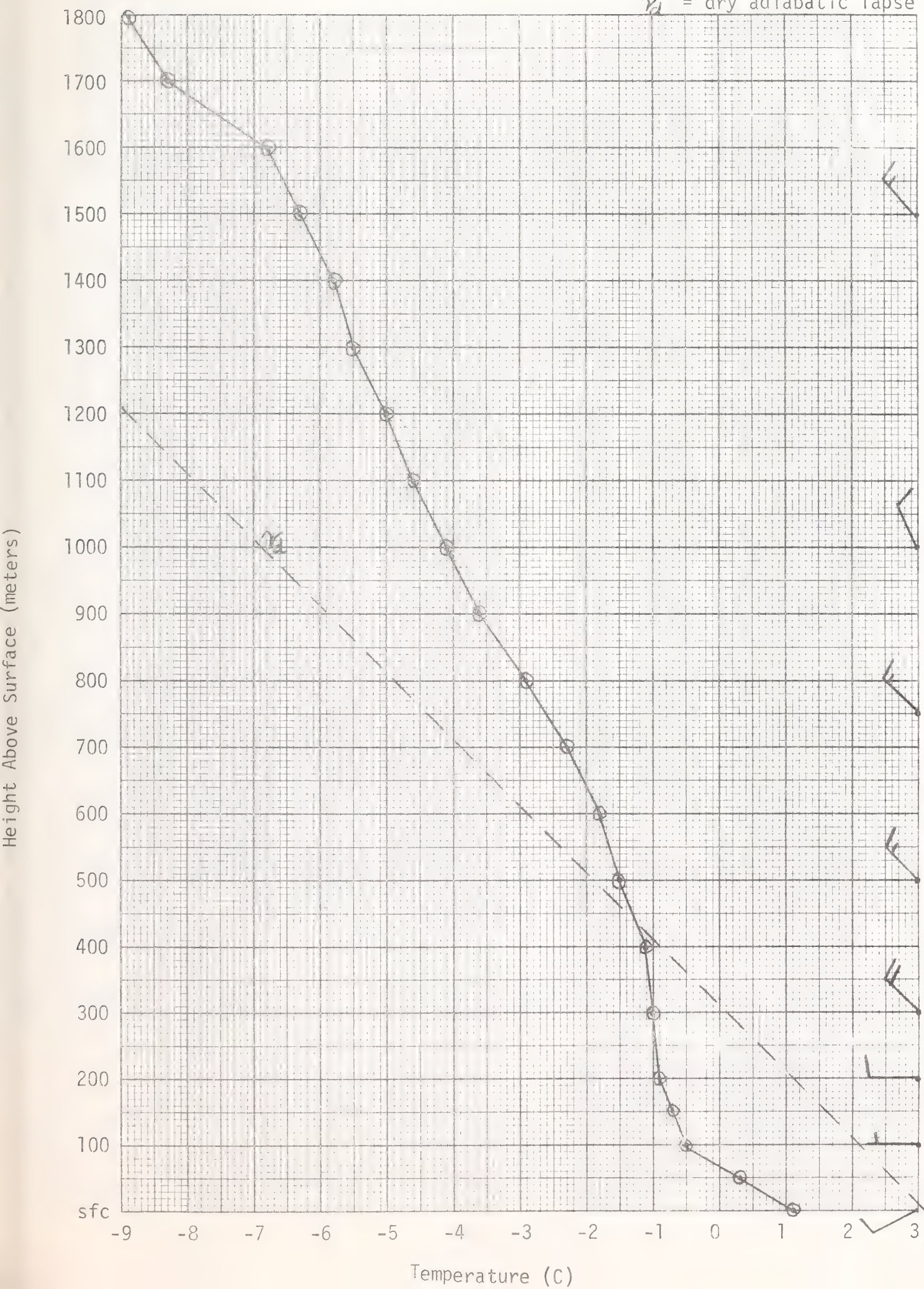


March 1978  
 Morning Monthly Average  
 Upper Air Sounding  
 Scobey, Montana  
 $\gamma_a$  = dry adiabatic lapse rate





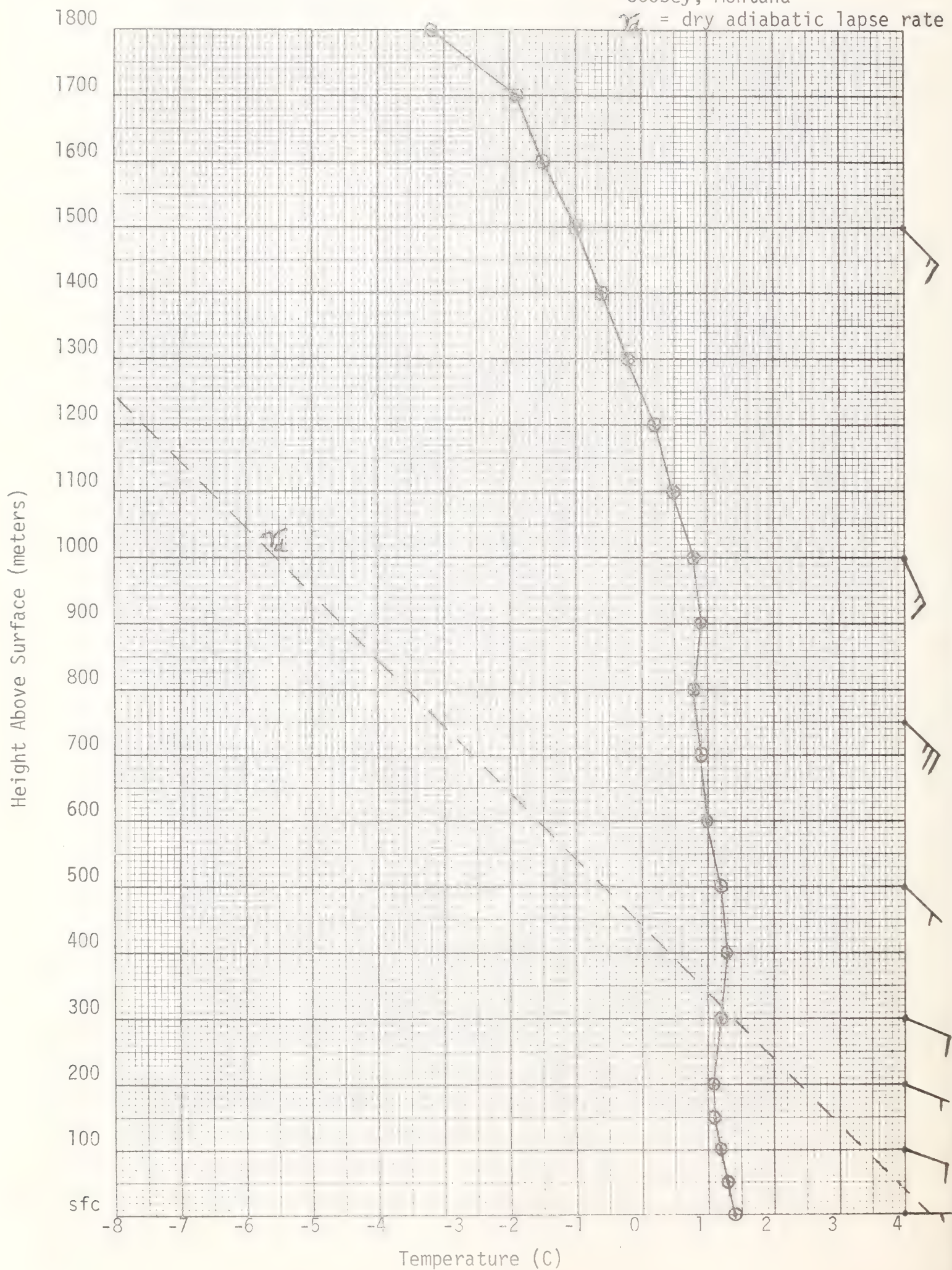
March 1978  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





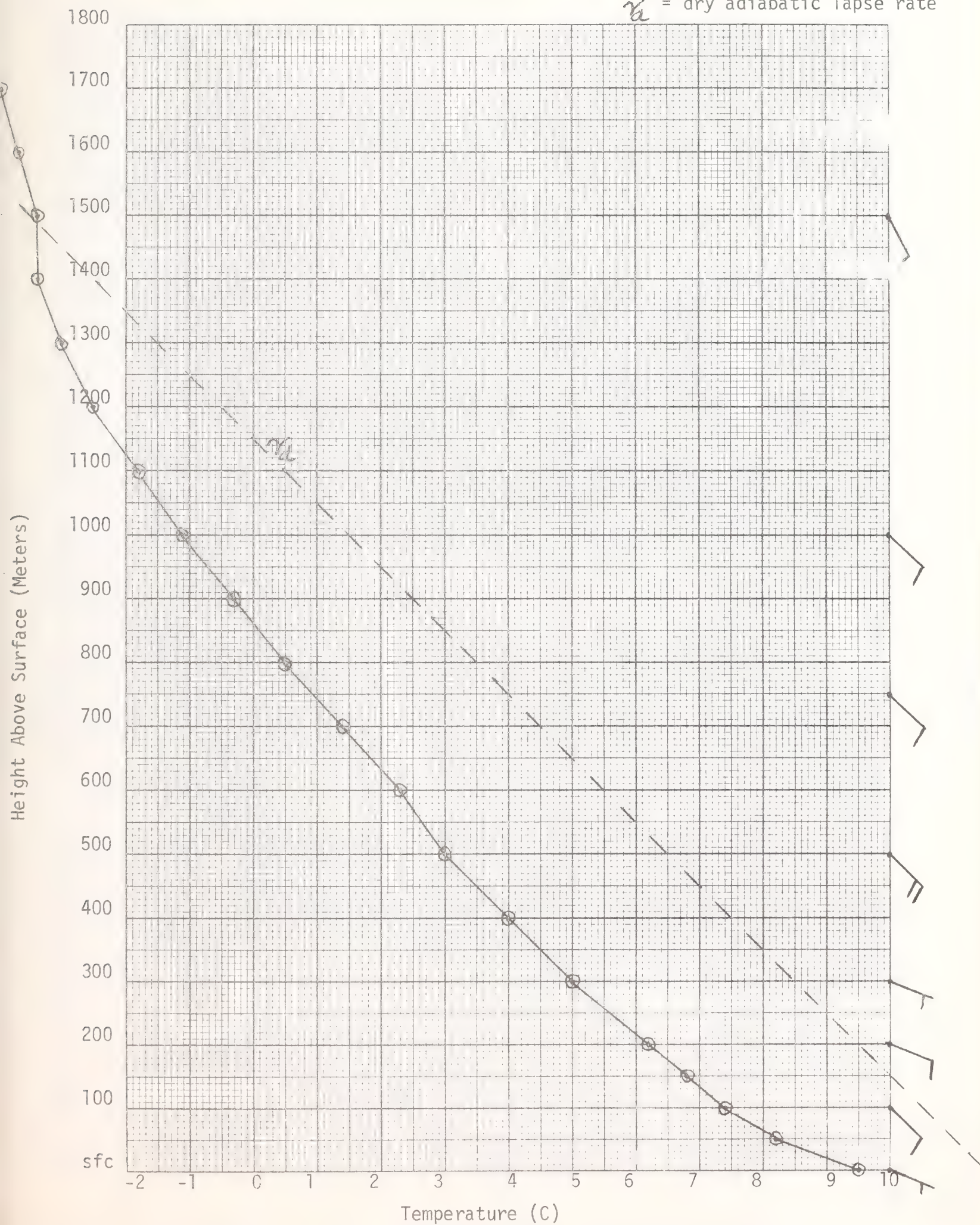
April 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana

$\gamma_d$  = dry adiabatic lapse rate





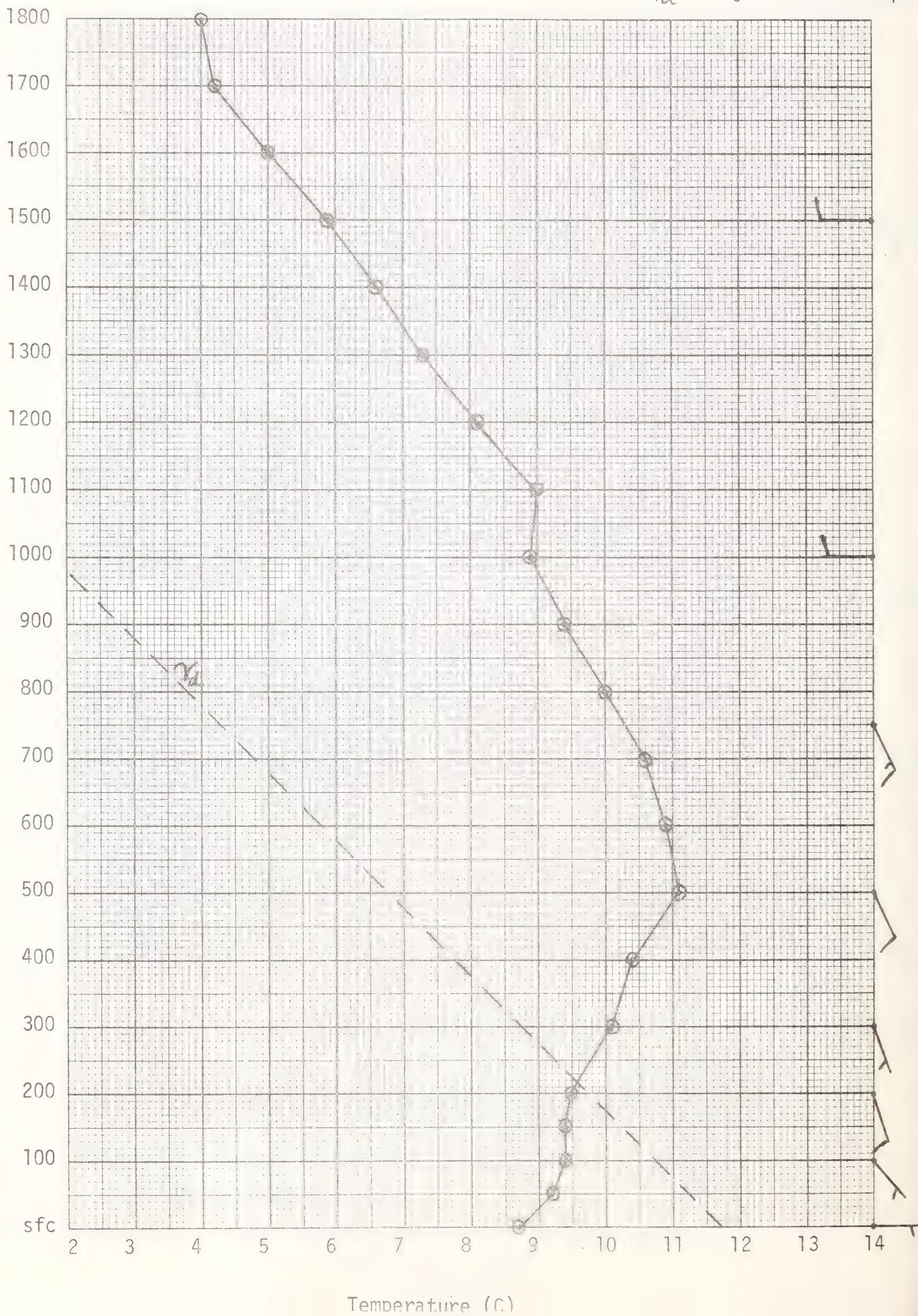
April 1978  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





May 1978  
 Morning Monthly Average  
 Upper Air Sounding  
 Scobey, Montana  
 $\gamma_a$  = dry adiabatic lapse

Height Above Surface (meters)

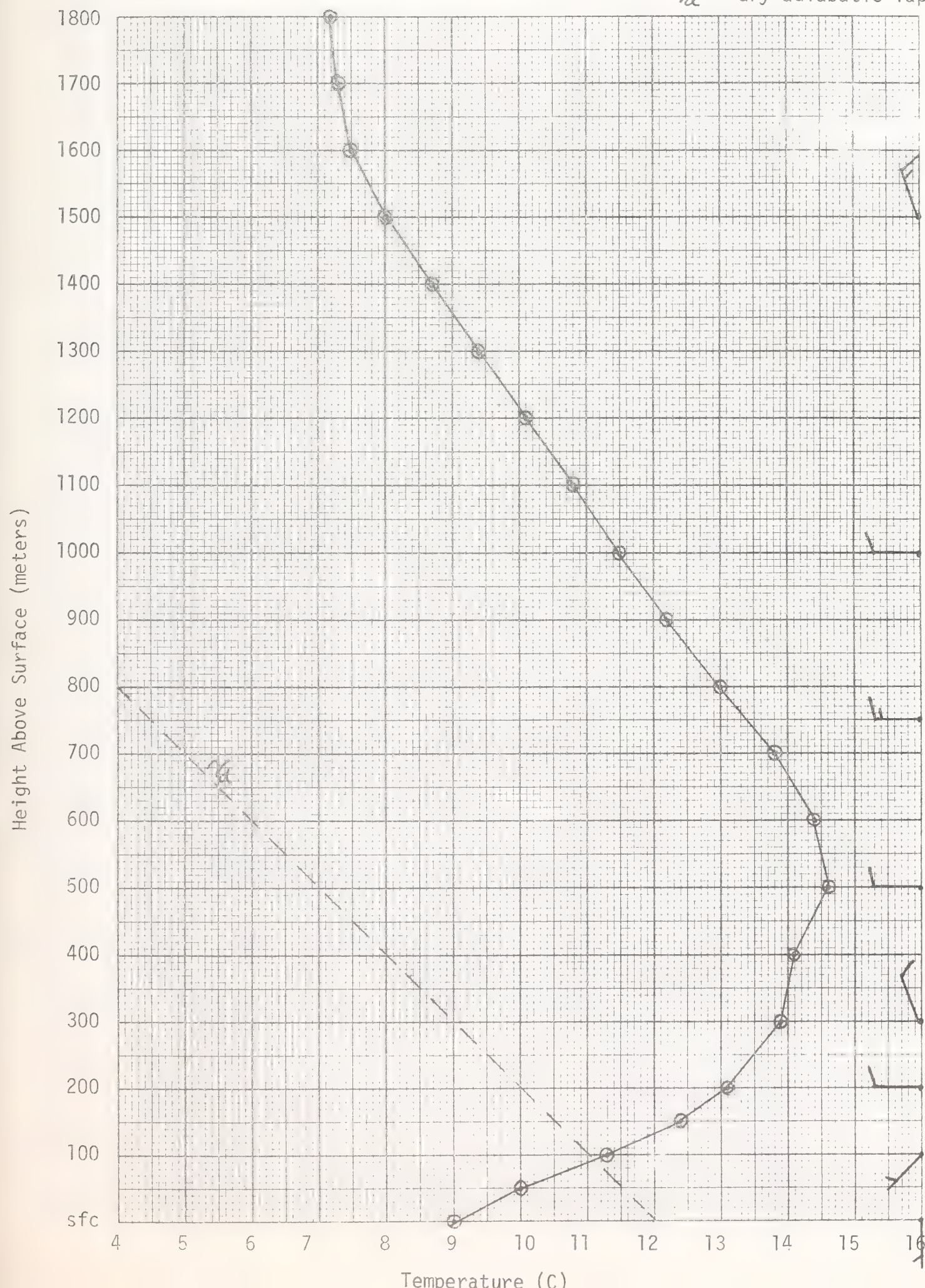


PRINTED IN U.S.A. ON CLEARPRINT PAPER NO. 101

TECHNICAL CHARTS



June 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

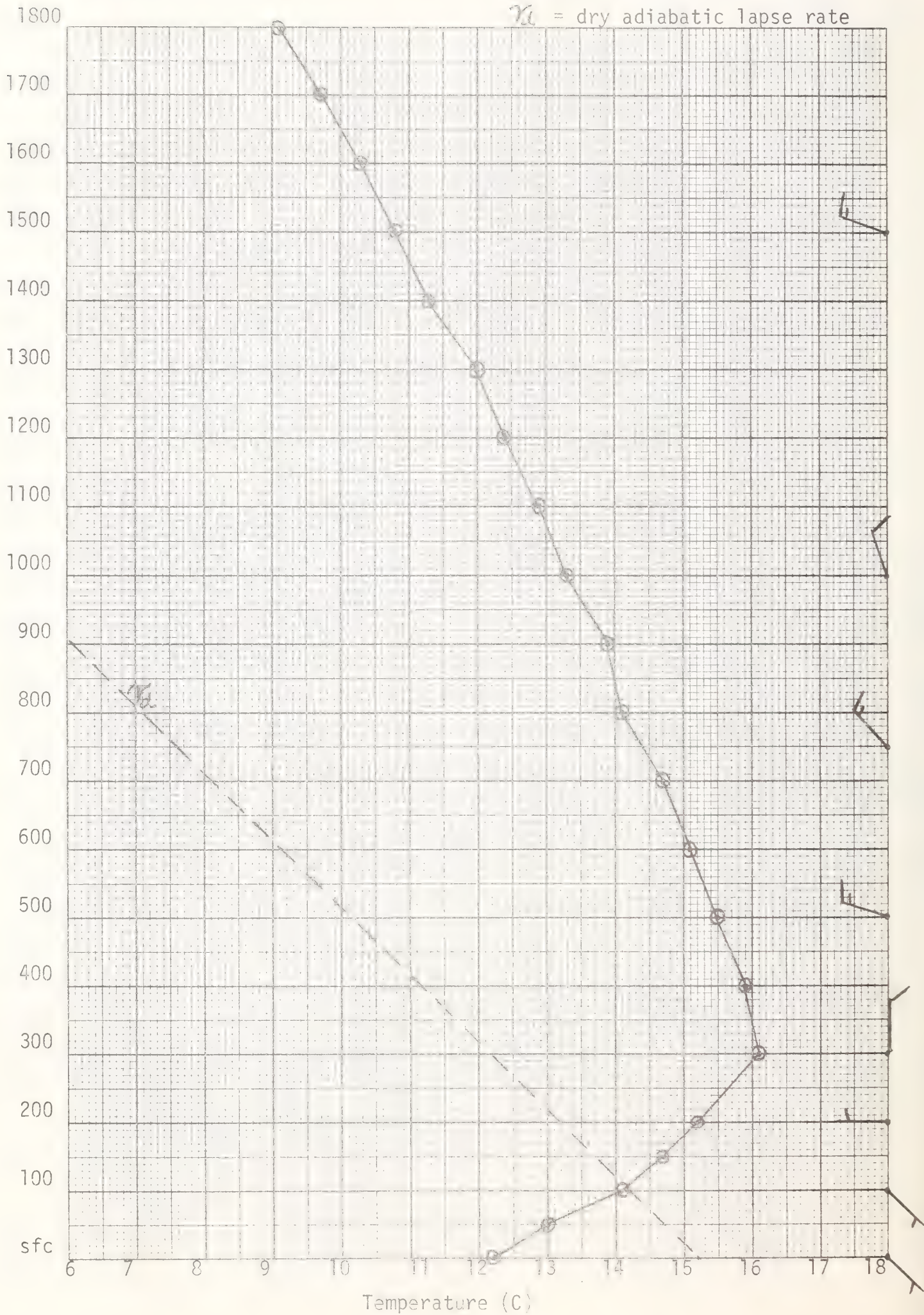




July 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana

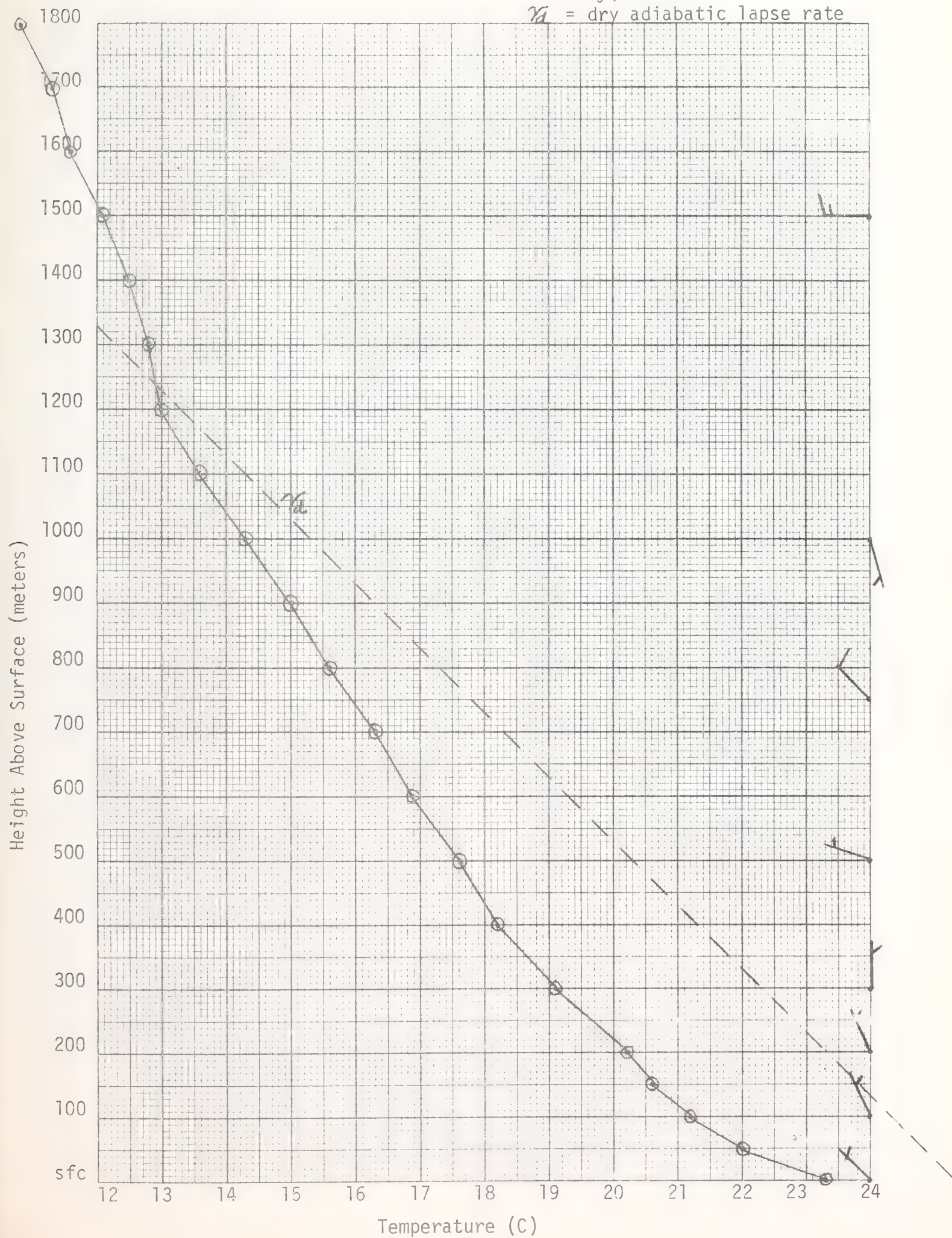
$\gamma_d$  = dry adiabatic lapse rate

Height Above Surface (meters)



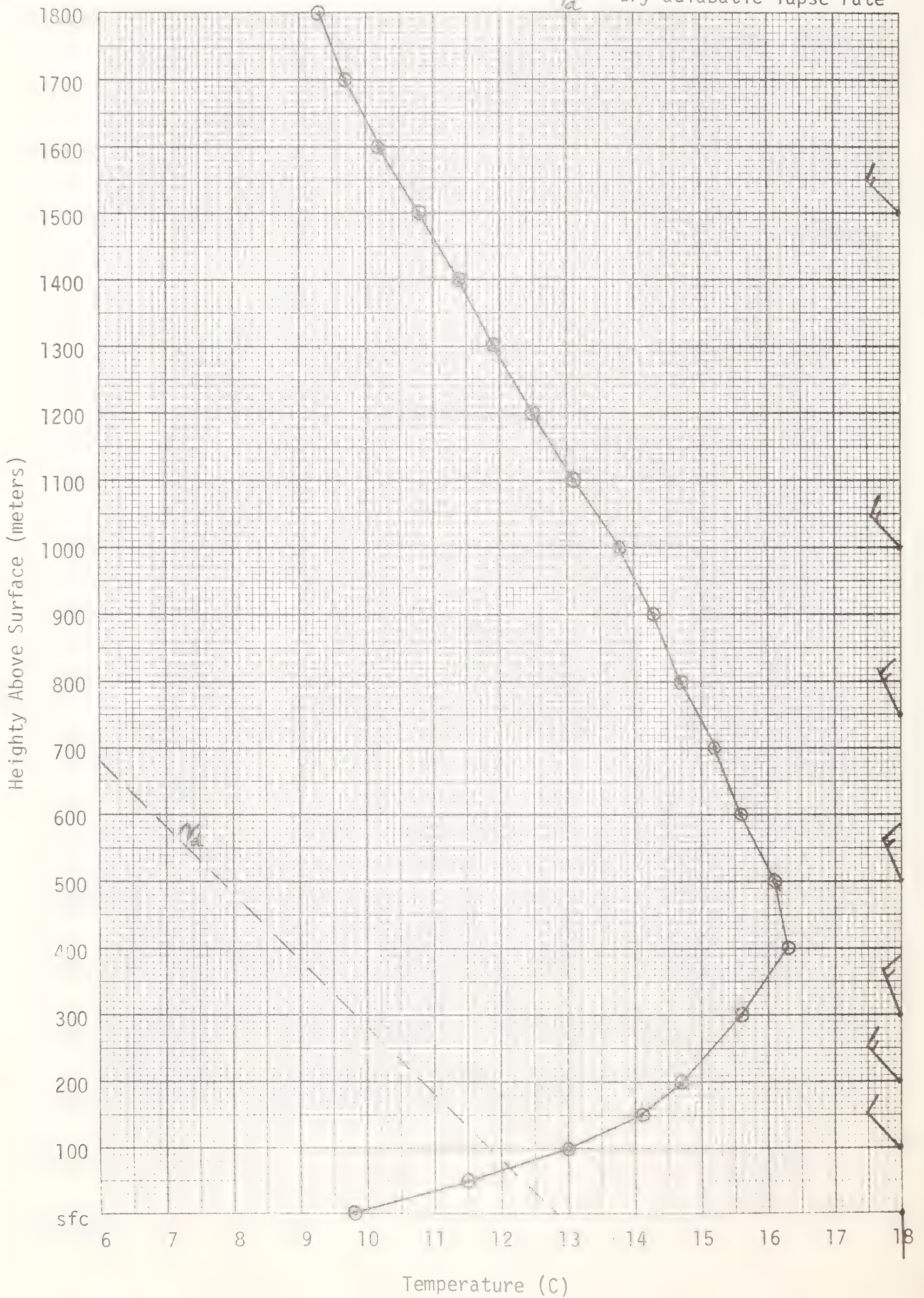


July 1978  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



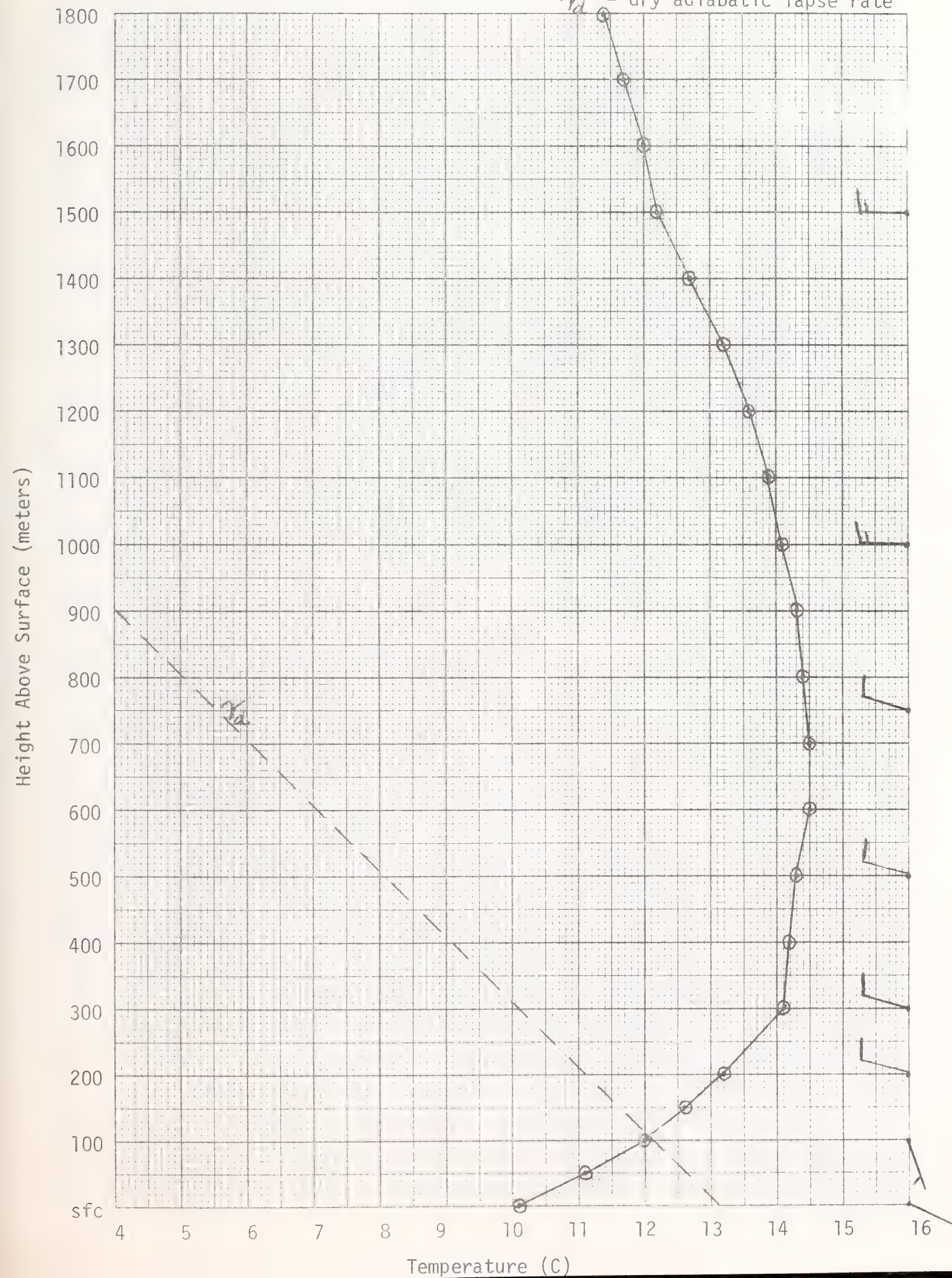


August 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



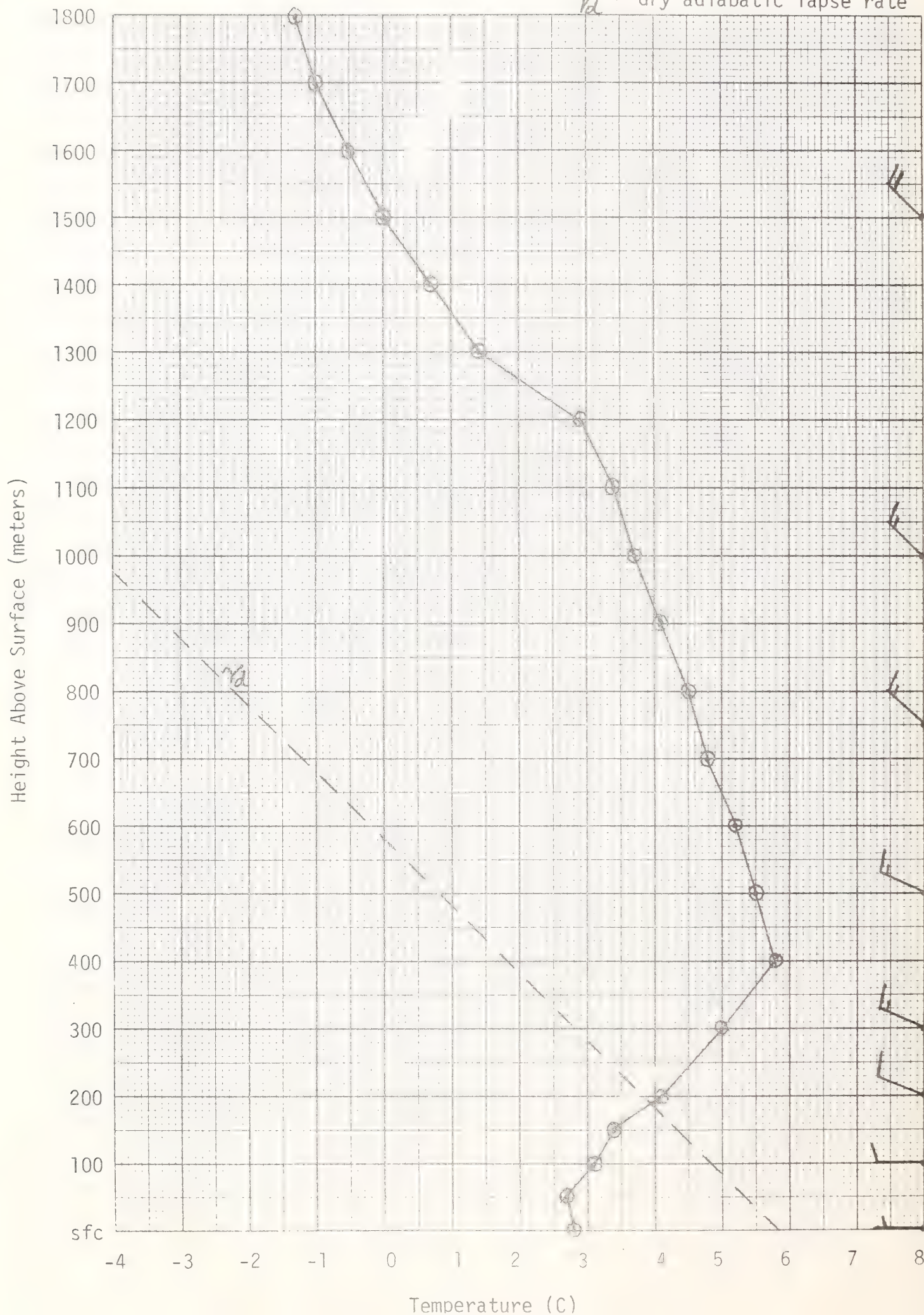


September 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

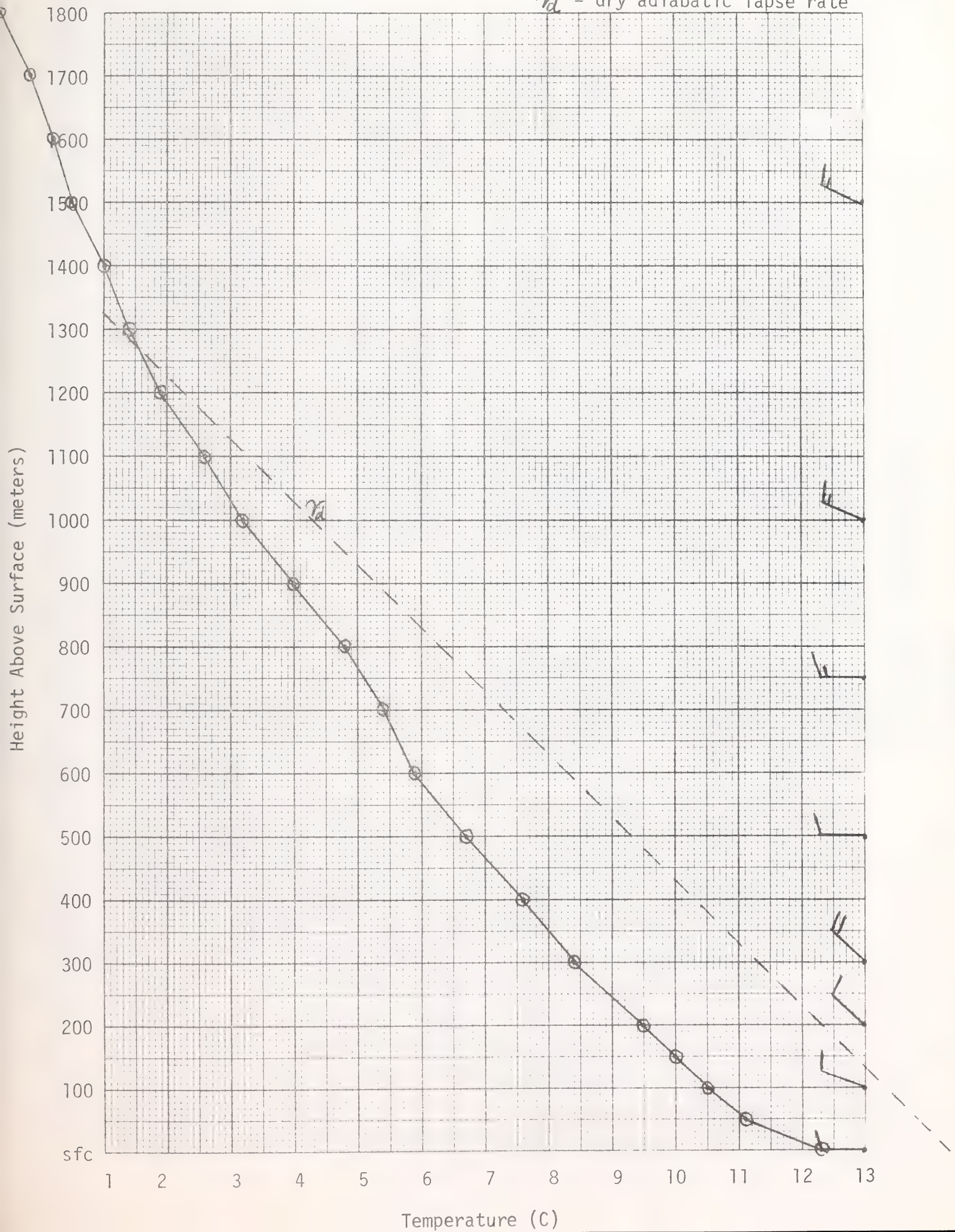




October 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

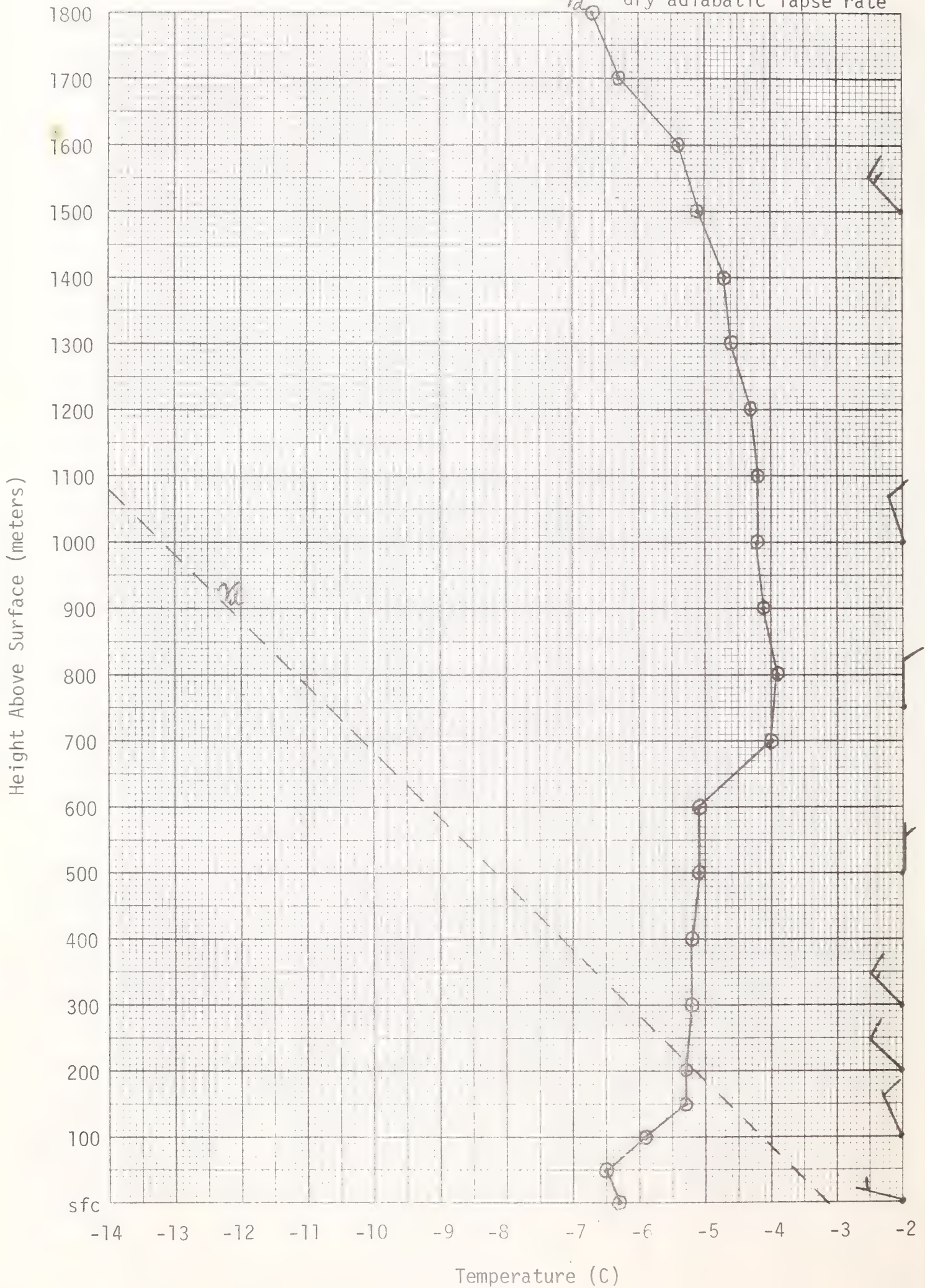


October 1978  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



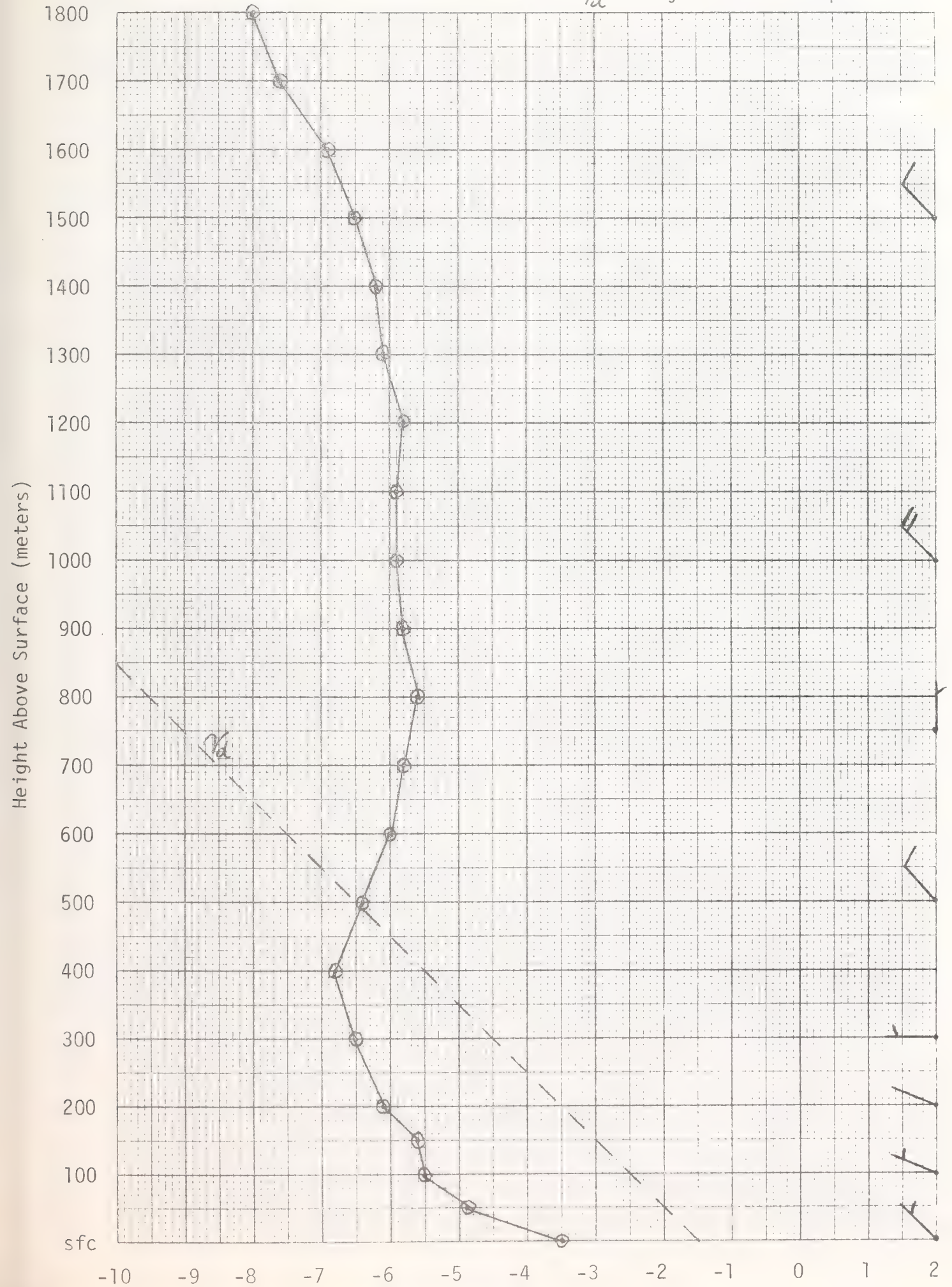


November 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_{da}$  = dry adiabatic lapse rate

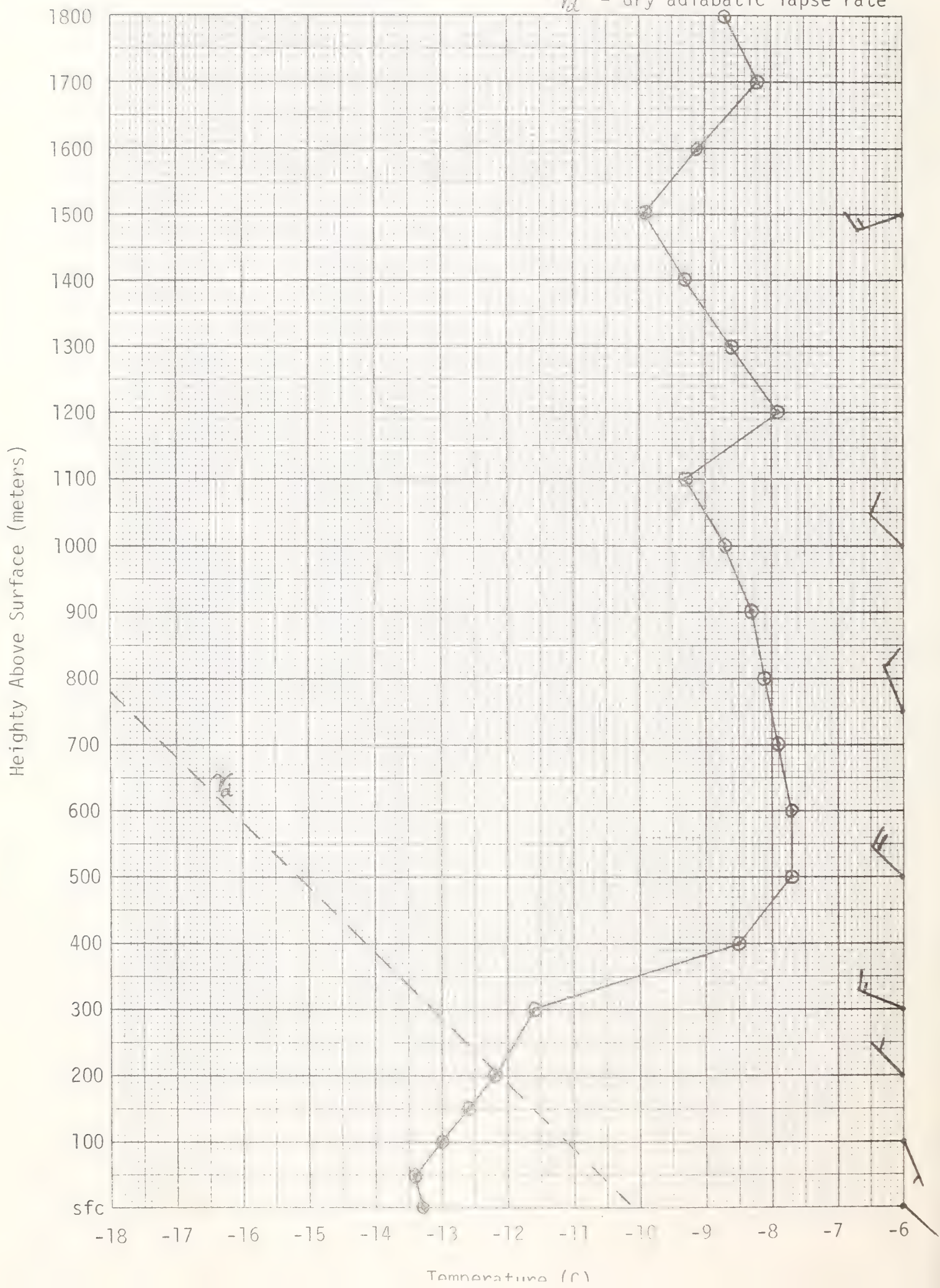




November 1978  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate



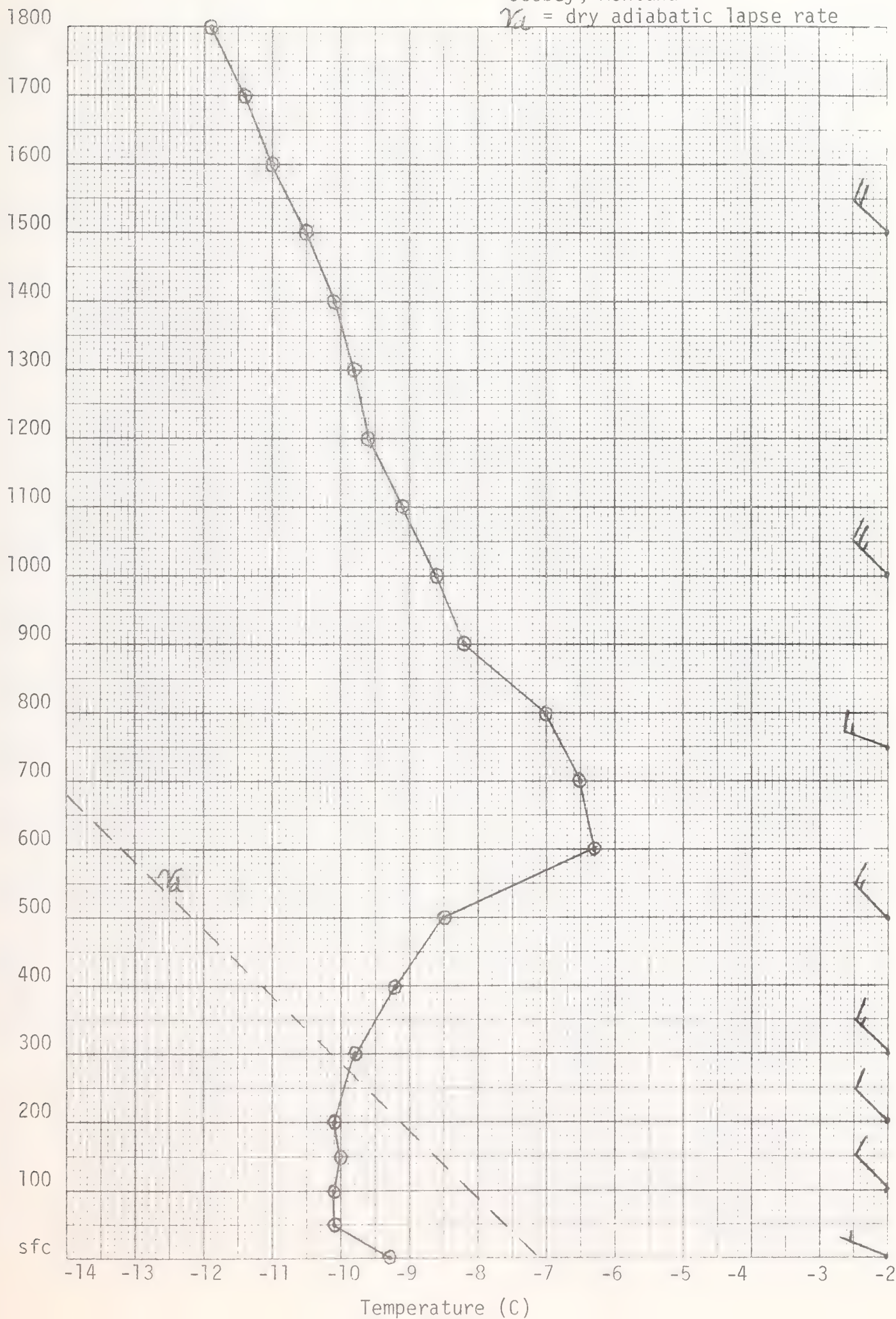
December 1978  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





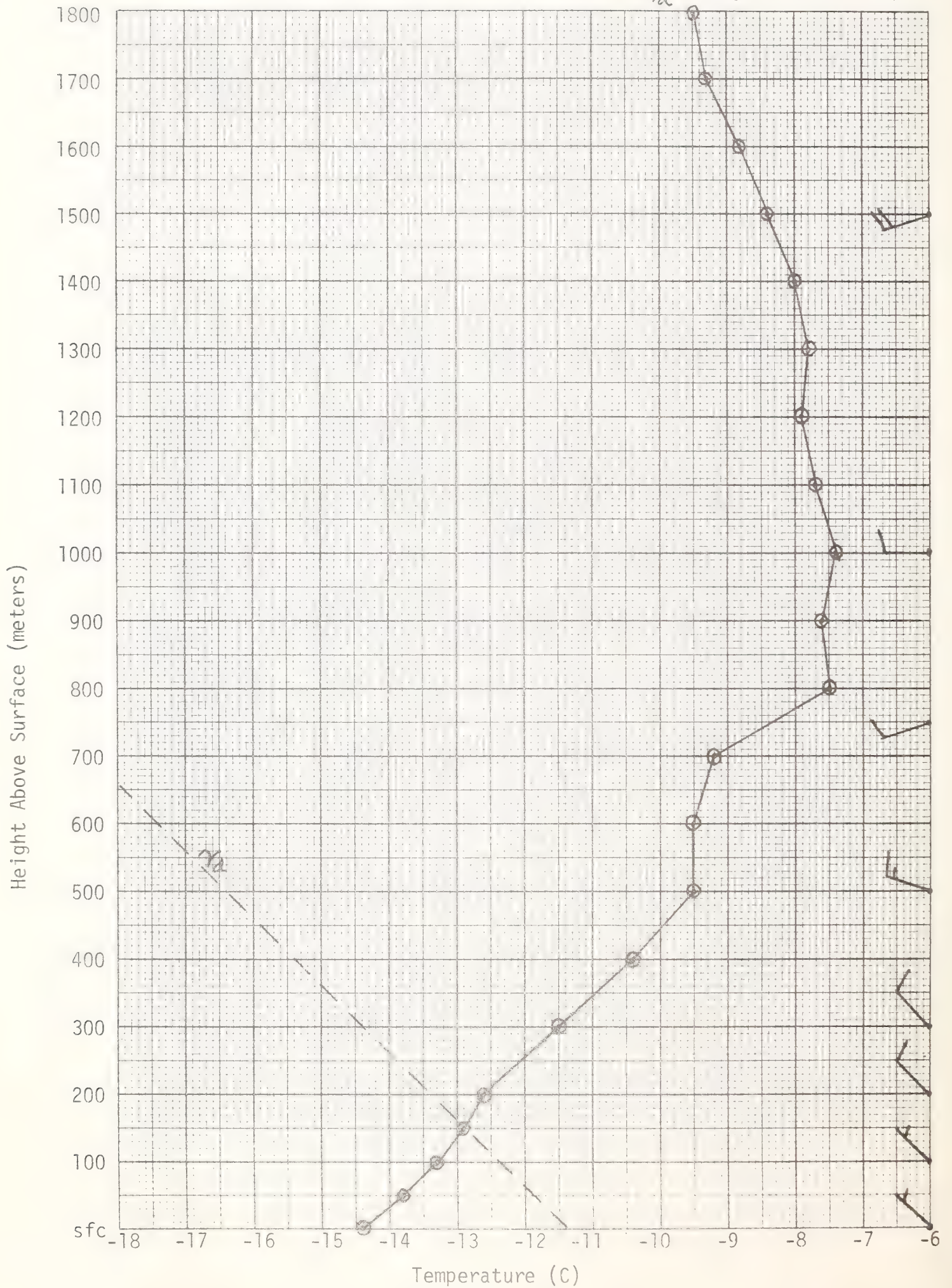
December 1978  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

Height Above Surface (meters)

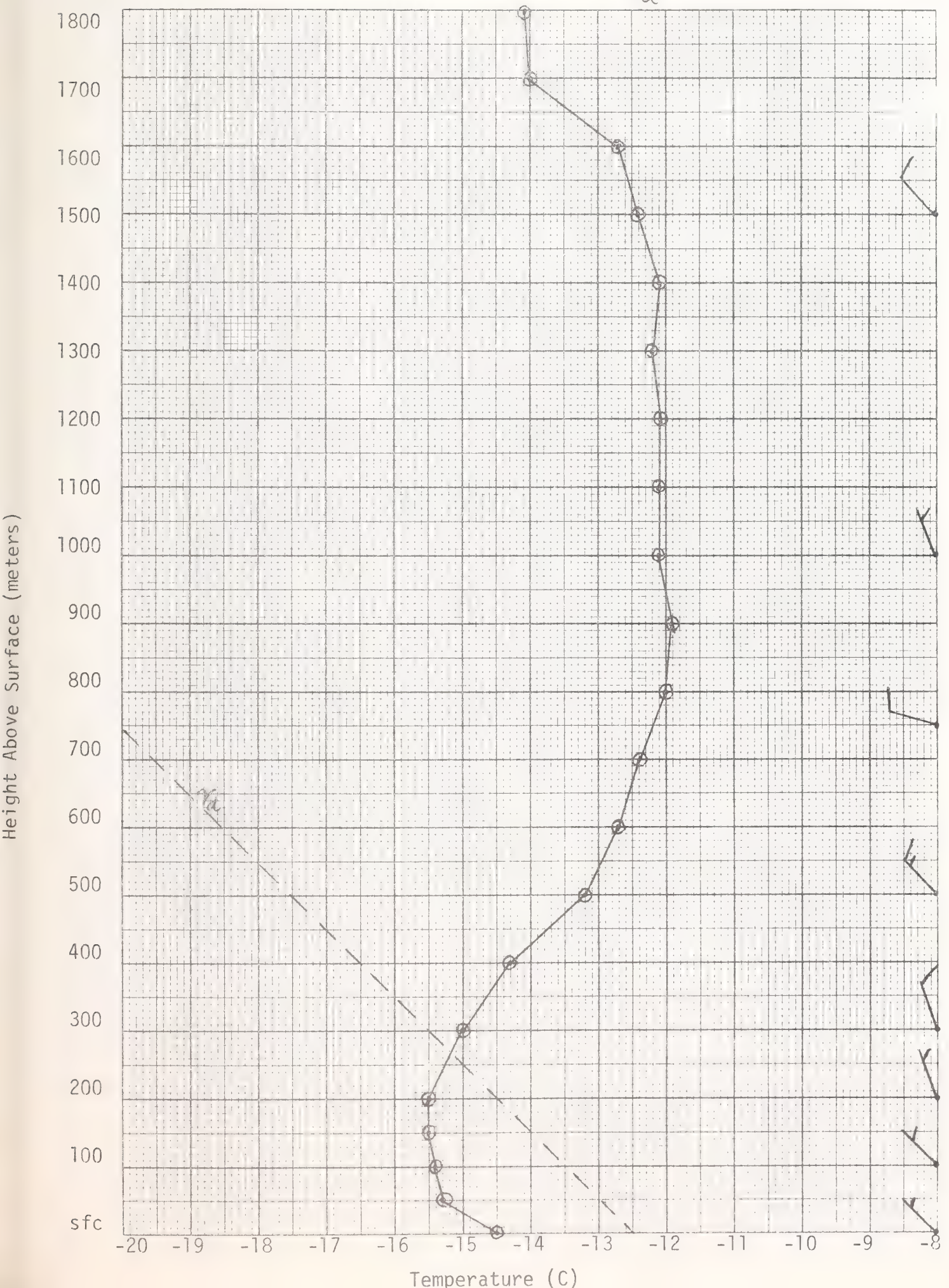




January 1979  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

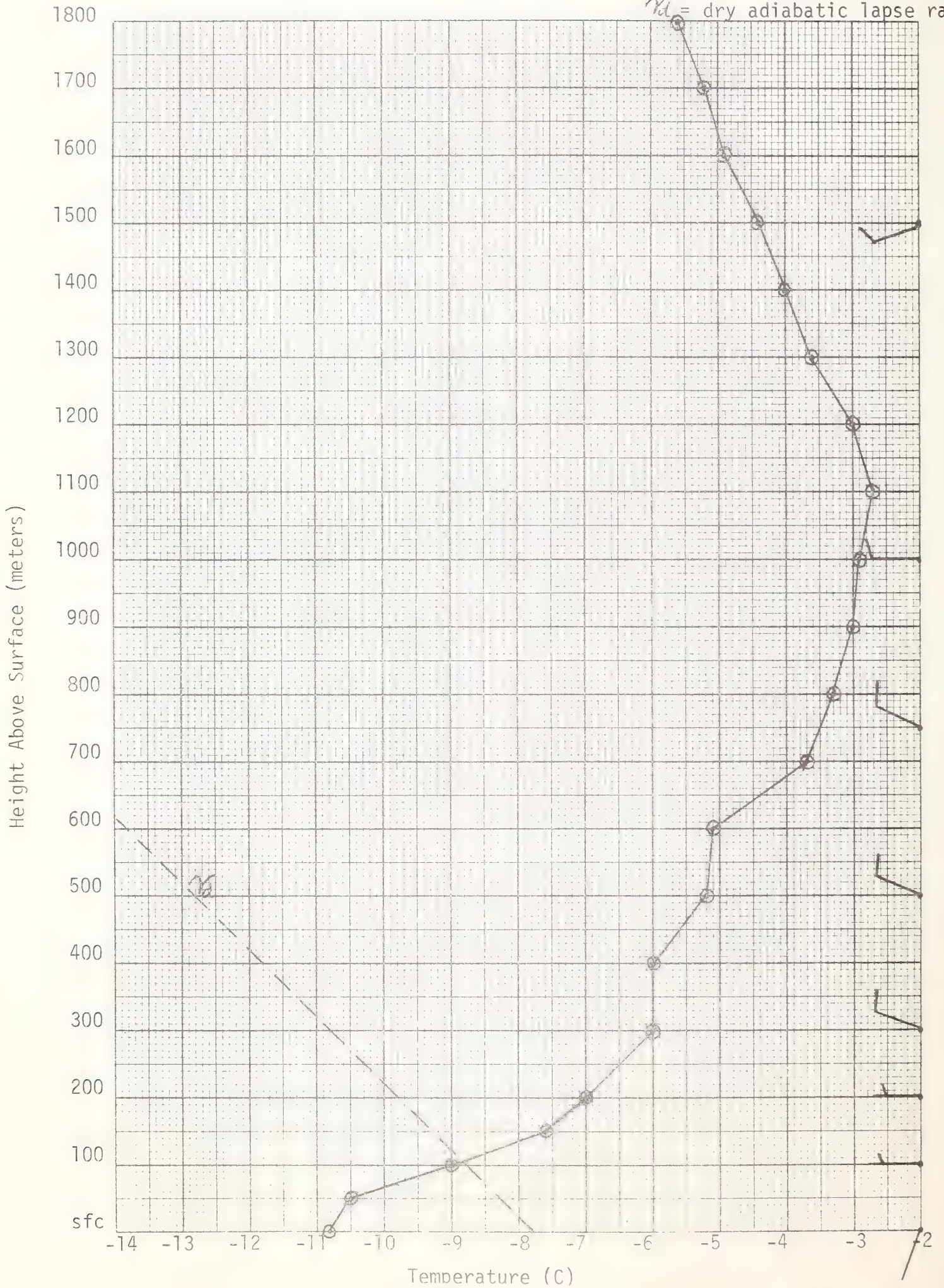


January 1979  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





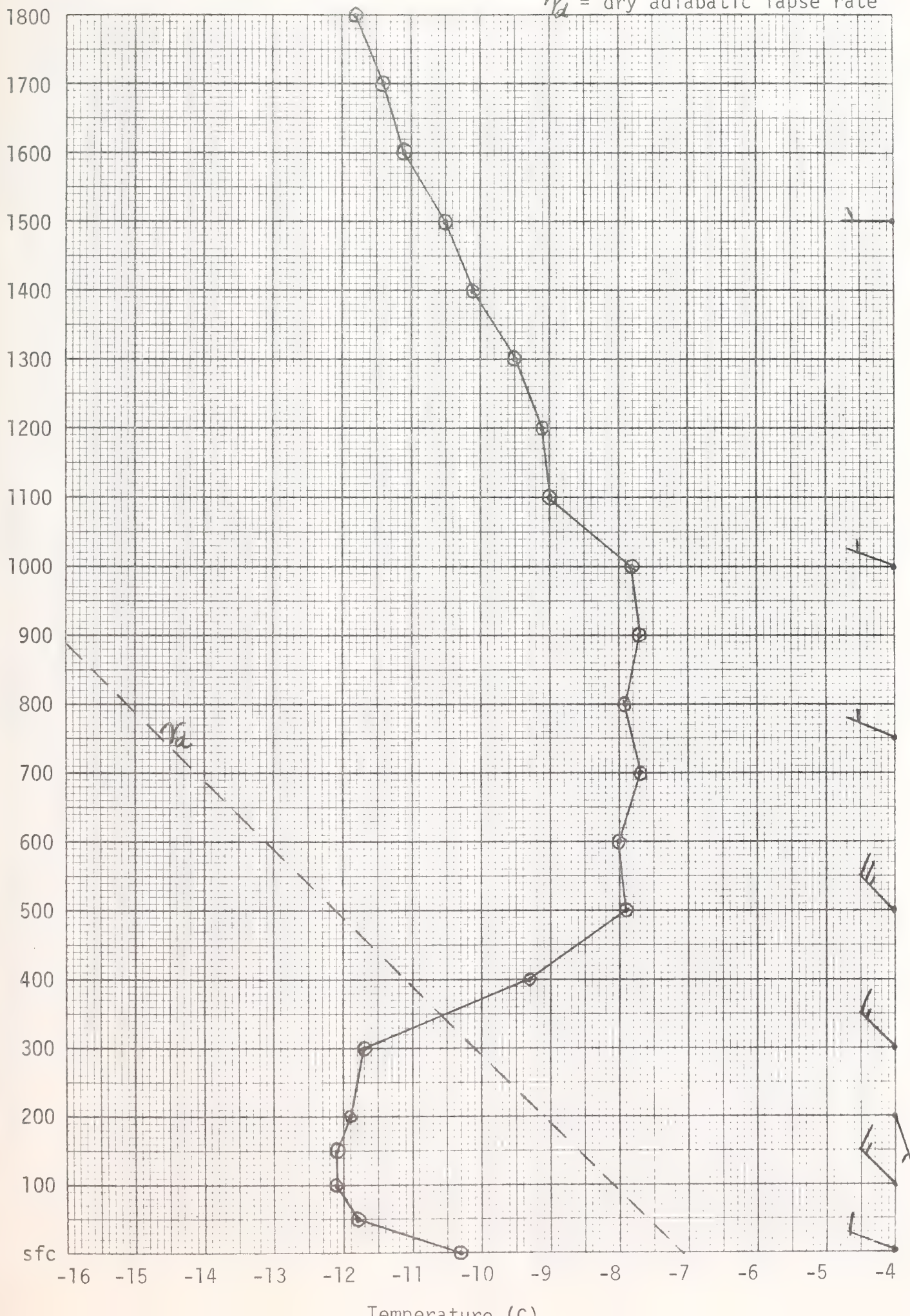
February 1979  
Morning Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





February 1979  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

Height Above Surface (meters)

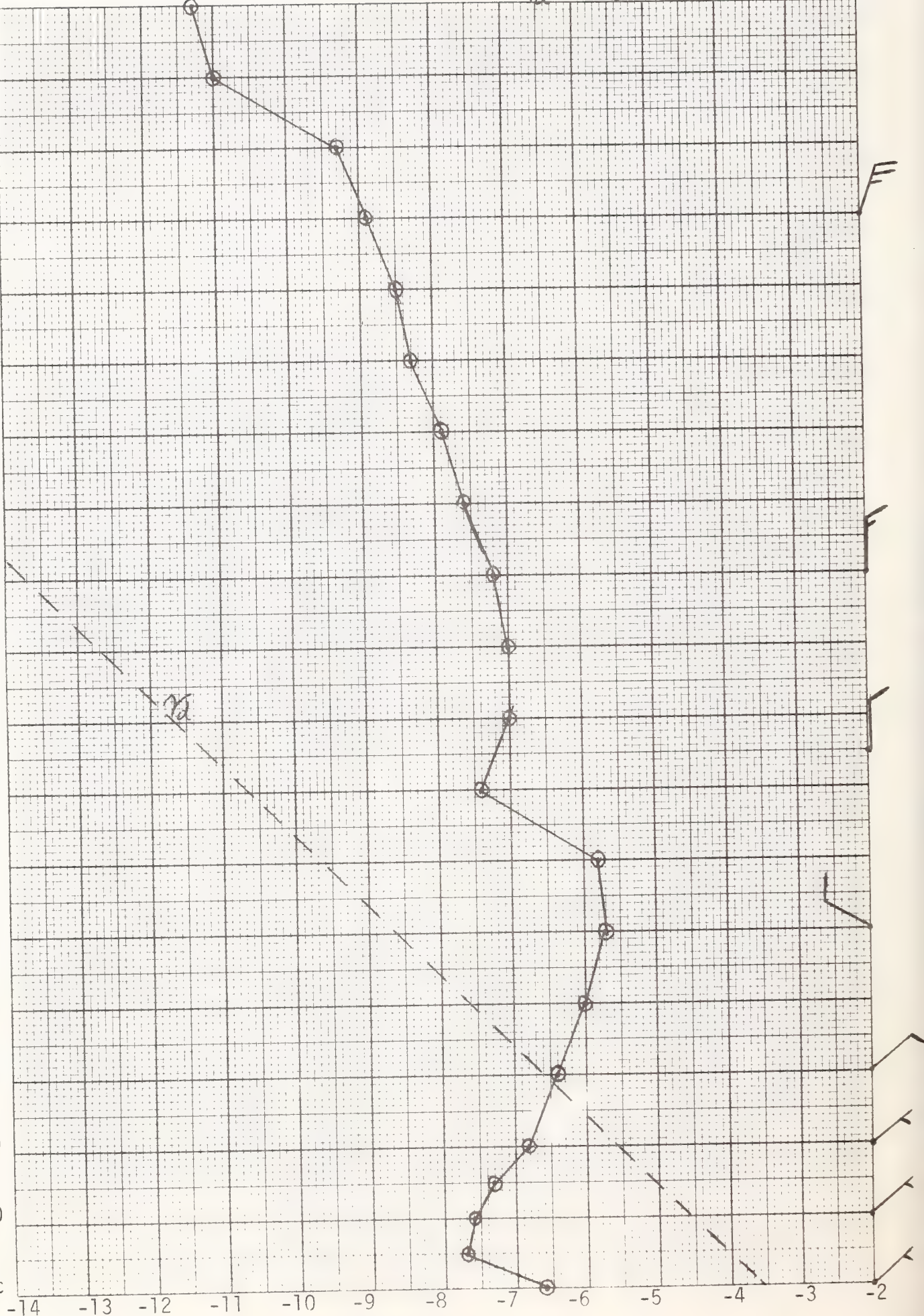




March 1979  
 Morning Monthly Average  
 Upper Air Sounding  
 Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate

Height Above Surface (meters)

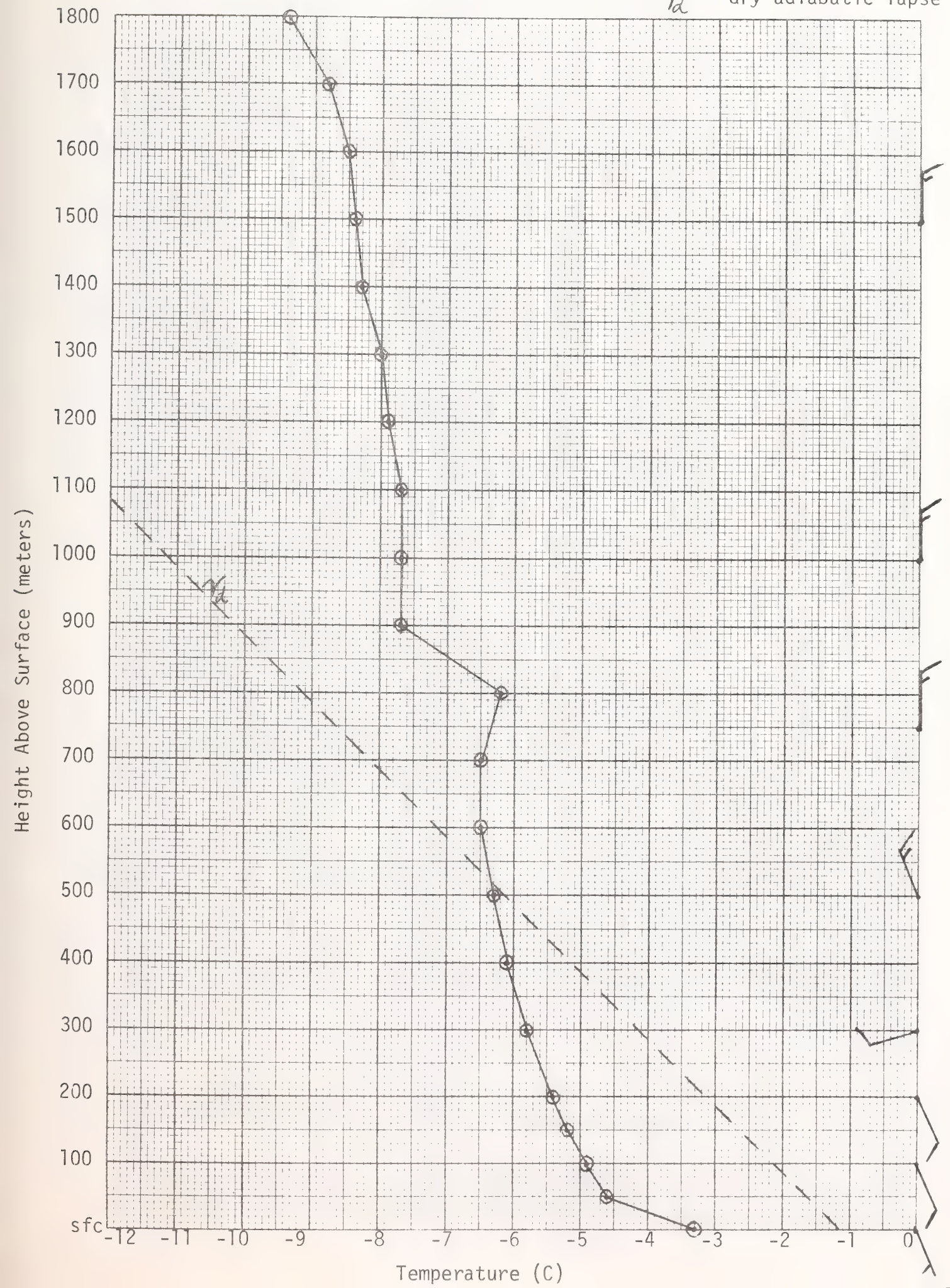
1800  
 1700  
 1600  
 1500  
 1400  
 1300  
 1200  
 1100  
 1000  
 900  
 800  
 700  
 600  
 500  
 400  
 300  
 200  
 100  
 sfc



Temperature (°C)



March 1979  
Afternoon Monthly Average  
Upper Air Sounding  
Scobey, Montana  
 $\gamma_d$  = dry adiabatic lapse rate





### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

REGISTRATION: JANUARY 15, 1991 - SCORNEY ES#1 HAVOL. PUBLISHER & CREATIN MET

ICC MEETER LEVEL MINDS MERNING MARCH, 1977

DIRECT ION WIND SPEEDS METERS/SEC

	00.1	03.0	06.0	10.0	16.0	GREATER	ROM	SUMMARY
	UU	TU	TC	TC	TC	TEAN	TOTAL	AVERAGE
02.9	05.9	09.9	15.9	25.0	25.0		CCUNT	SPEED

9.0	9.0	2	18.0	5.9
9.0	9.0	2	0.0	

NATIONAL BUREAU OF ECONOMIC RESEARCH  
 79 JOURNAL OF POLITICAL ECONOMY

**B**

SON

T  
O  
O  
O  
O

	9.6	9.0	34.9
S.S.W.	9.0	9.0	34.9
S.S.W.			

[illegible][illegible][illegible]

CALM	C	0.0

CGL. TCTALS	27.0	27.1	36.0	9.0	11	7.7
-------------	------	------	------	-----	----	-----

100 METER LEVEL WINDS AFTERNOON MARCH, 1977

DIRECTION	WIND SPEEDS	METERS/SEC	CMH	SUMMARY
001	05	10	0	
02	05	10	0	
03	05	10	0	
04	05	10	0	
05	05	10	0	
06	05	10	0	
07	05	10	0	
08	05	10	0	
09	05	10	0	
10	05	10	0	
11	05	10	0	
12	05	10	0	
13	05	10	0	
14	05	10	0	
15	05	10	0	
16	05	10	0	
17	05	10	0	
18	05	10	0	
19	05	10	0	
20	05	10	0	
21	05	10	0	
22	05	10	0	
23	05	10	0	
24	05	10	0	
25	05	10	0	
26	05	10	0	
27	05	10	0	
28	05	10	0	
29	05	10	0	
30	05	10	0	
31	05	10	0	
32	05	10	0	
33	05	10	0	
34	05	10	0	
35	05	10	0	
36	05	10	0	
37	05	10	0	
38	05	10	0	
39	05	10	0	
40	05	10	0	
41	05	10	0	
42	05	10	0	
43	05	10	0	
44	05	10	0	
45	05	10	0	
46	05	10	0	
47	05	10	0	
48	05	10	0	
49	05	10	0	
50	05	10	0	
51	05	10	0	
52	05	10	0	
53	05	10	0	
54	05	10	0	
55	05	10	0	
56	05	10	0	
57	05	10	0	
58	05	10	0	
59	05	10	0	
60	05	10	0	
61	05	10	0	
62	05	10	0	
63	05	10	0	
64	05	10	0	
65	05	10	0	
66	05	10	0	
67	05	10	0	
68	05	10	0	
69	05	10	0	
70	05	10	0	
71	05	10	0	
72	05	10	0	
73	05	10	0	
74	05	10	0	
75	05	10	0	
76	05	10	0	
77	05	10	0	
78	05	10	0	
79	05	10	0	
80	05	10	0	
81	05	10	0	
82	05	10	0	
83	05	10	0	
84	05	10	0	
85	05	10	0	
86	05	10	0	
87	05	10	0	
88	05	10	0	
89	05	10	0	
90	05	10	0	
91	05	10	0	
92	05	10	0	
93	05	10	0	
94	05	10	0</	

	TIC	TO	TIC	TIC	TFAN	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED
039		059	009	159	250	350		
TC		TO	TIC	TIC	TFAN	TOTAL COUNT	TOTAL PERCENT	AVERAGE SPEED

2

NE	9.0	9.0	2	18.0	7.4
NE	9.0	9.0	2	18.0	7.4

00  
00  
00

ENE

$\frac{m}{n}$

$\frac{0}{0}$

$\frac{0}{0} \cdot \frac{0}{0}$

[illegible][illegible]

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523</
--	---	---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-------

1997  
 1998  
 1999  
 2000  
 2001  
 2002  
 2003  
 2004  
 2005  
 2006  
 2007  
 2008  
 2009  
 2010  
 2011  
 2012  
 2013  
 2014  
 2015  
 2016  
 2017  
 2018  
 2019  
 2020  
 2021  
 2022  
 2023  
 2024  
 2025  
 2026  
 2027  
 2028  
 2029  
 2030  
 2031  
 2032  
 2033  
 2034  
 2035  
 2036  
 2037  
 2038  
 2039  
 2040  
 2041  
 2042  
 2043  
 2044  
 2045  
 2046  
 2047  
 2048  
 2049  
 2050  
 2051  
 2052  
 2053  
 2054  
 2055  
 2056  
 2057  
 2058  
 2059  
 2060  
 2061  
 2062  
 2063  
 2064  
 2065  
 2066  
 2067  
 2068  
 2069  
 2070  
 2071  
 2072  
 2073  
 2074  
 2075  
 2076  
 2077  
 2078  
 2079  
 2080  
 2081  
 2082  
 2083  
 2084  
 2085  
 2086  
 2087  
 2088  
 2089  
 2090  
 2091  
 2092  
 2093  
 2094  
 2095  
 2096  
 2097  
 2098  
 2099  
 2100  
 2101  
 2102  
 2103  
 2104  
 2105  
 2106  
 2107  
 2108  
 2109  
 2110  
 2111  
 2112  
 2113  
 2114  
 2115  
 2116  
 2117  
 2118  
 2119  
 2120  
 2121  
 2122  
 2123  
 2124  
 2125  
 2126  
 2127  
 2128  
 2129  
 2130  
 2131  
 2132  
 2133  
 2134  
 2135  
 2136  
 2137  
 2138  
 2139  
 2140  
 2141  
 2142  
 2143  
 2144  
 2145  
 2146  
 2147  
 2148  
 2149  
 2150  
 2151  
 2152  
 2153  
 2154  
 2155  
 2156  
 2157  
 2158  
 2159  
 2160  
 2161  
 2162  
 2163  
 2164  
 2165  
 2166  
 2167  
 2168  
 2169  
 2170  
 2171  
 2172  
 2173  
 2174  
 2175  
 2176  
 2177  
 2178  
 2179  
 2180  
 2181  
 2182  
 2183  
 2184  
 2185  
 2186  
 2187  
 2188  
 2189  
 2190  
 2191  
 2192  
 2193  
 2194  
 2195  
 2196  
 2197  
 2198  
 2199  
 2200  
 2201  
 2202  
 2203  
 2204  
 2205  
 2206  
 2207  
 2208  
 2209  
 2210  
 2211  
 2212  
 2213  
 2214  
 2215  
 2216  
 2217  
 2218  
 2219  
 2220  
 2221  
 2222  
 2223  
 2224  
 2225  
 2226  
 2227  
 2228  
 2229  
 2230  
 2231  
 2232  
 2233  
 2234  
 2235  
 2236  
 2237  
 2238  
 2239  
 2240  
 2241  
 2242  
 2243  
 2244  
 2245  
 2246  
 2247  
 2248  
 2249  
 2250  
 2251  
 2252  
 2253  
 2254  
 2255  
 2256  
 2257  
 2258  
 2259  
 2260  
 2261  
 2262  
 2263  
 2264  
 2265  
 2266  
 2267  
 2268  
 2269  
 2270  
 2271  
 2272  
 2273  
 2274  
 2275  
 2276  
 2277  
 2278  
 2279  
 2280  
 2281  
 2282  
 2283  
 2284  
 2285  
 2286  
 2287  
 2288  
 2289  
 2290  
 2291  
 2292  
 2293  
 2294  
 2295  
 2296  
 2297  
 2298  
 2299  
 2300  
 2301  
 2302  
 2303  
 2304  
 2305  
 2306  
 2307  
 2308  
 2309  
 2310  
 2311  
 2312  
 2313  
 2314  
 2315  
 2316  
 2317  
 2318  
 2319  
 2320  
 2321  
 2322  
 2323  
 2324  
 2325  
 2326  
 2327  
 2328  
 2329  
 2330  
 2331  
 2332  
 2333  
 2334  
 2335  
 2336  
 2337  
 2338  
 2339  
 2340  
 2341  
 2342  
 2343  
 2344  
 2345  
 2346  
 2347  
 2348  
 2349  
 2350  
 2351  
 2352  
 2353  
 2354  
 2355  
 2356  
 2357  
 2358  
 2359  
 2360  
 2361  
 2362  
 2363  
 2364  
 2365  
 2366  
 2367  
 2368  
 2369  
 2370  
 2371  
 2372  
 2373  
 2374  
 2375  
 2376  
 2377  
 2378  
 2379  
 2380  
 2381  
 2382  
 2383  
 2384  
 2385  
 2386  
 2387  
 2388  
 2389  
 2390  
 2391  
 2392  
 2393  
 2394  
 2395  
 2396  
 2397  
 2398  
 2399  
 2400  
 2401  
 2402  
 2403  
 2404  
 2405  
 2406  
 2407  
 2408  
 2409  
 2410  
 2411  
 2412  
 2413  
 2414  
 2415  
 2416  
 2417  
 2418  
 2419  
 2420  
 2421  
 2422  
 2423  
 2424  
 2425  
 2426  
 2427  
 2428  
 2429  
 2430  
 2431  
 2432  
 2433  
 2434  
 2435  
 2436  
 2437  
 2438  
 2439  
 2440  
 2441  
 2442  
 2443  
 2444  
 2445  
 2446  
 2447  
 2448  
 2449  
 2450  
 2451

[illegible]

CALM	0	0.0
------	---	-----

COL.	ICIALS	27.0	18.0	36.0	18.0	11	6.4
------	--------	------	------	------	------	----	-----

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL,BUBBLER & CCNTIN MET

200 METER LEVEL WINDS MORNING MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	09.0 TO 15.9	10.0 TO 25.0	16.0 TO 25.0	PETERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N	9.0		9.0	9.0				3	27.0	8.2
NNE								1	9.0	8.8
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SE			9.0					1	9.0	9.4
SSE								0	0.0	
SSW		9.0						1	9.0	3.6
WSW			9.0	9.0				1	9.0	14.2
W								1	9.0	10.8
NNW			9.0					1	9.0	11.0
NN		5.0	9.0					2	18.0	9.8
CALM								0	0.0	
COL. TOTALS	9.0	9.0	36.0	45.0				11		9.2

200 METER LEVEL WINDS AFTERNOON MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	09.0 TO 15.9	10.0 TO 25.0	16.0 TO 25.0	PETERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N	9.0		9.0					0	0.0	2.0
NNE								1	9.0	8.4
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SE			9.0					1	9.0	8.0
SSE								1	9.0	3.6
SSW		9.0						1	9.0	4.4
WSW			9.0	9.0				1	9.0	10.6
W								1	9.0	30.2
NNW			9.0					1	9.0	6.7
NN		9.0	9.0					2	18.0	4.9
CALM								0	0.0	
COL. TOTALS	27.0	18.0	36.0	9.0				11		7.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL,BUBBLER & CCNTIN MET

300 METER LEVEL WINDS MORNING MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	09.0 TO 15.9	10.0 TO 25.0	16.0 TO 25.0	PETERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N		10.0	10.0	10.0				3	30.0	8.5
NNE								1	10.0	14.2
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SE								0	0.0	
SSE				10.0				1	10.0	12.2
SSW								0	0.0	
WSW			10.0	10.0				2	20.0	11.3
W								0	0.0	
NNW			10.0	10.0				2	20.0	7.1
NN								1	10.0	10.1
CALM								0	0.0	
COL. TOTALS	20.0	20.0	60.0					10		9.8

300 METER LEVEL WINDS AFTERNOON MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	09.0 TO 15.9	10.0 TO 25.0	16.0 TO 25.0	PETERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N								0	0.0	0.0
NNE								0	0.0	0.0
ENE								0	0.0	0.0
E								0	0.0	0.0
ESE								0	0.0	0.0
SE			12.5					1	12.5	6.5
SSE								1	12.5	3.9
SSW		12.5						1	12.5	11.0
WSW								0	0.0	
W								2	25.0	25.7
NNW			12.5	12.5				1	12.5	5.2
NN								1	10.0	20.1
CALM								0	0.0	
COL. TOTALS	25.0	12.5	25.0	12.5	12.5	12.5		8		11.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 FIVOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MCRNING MARCH,1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9- 25.0	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N						11.1		0	0.0
NNE						11.1		1	11.1
ENE						11.1		0	0.0
E						11.1		1	11.1
ESE						11.1		0	0.0
SSE						11.1		0	0.0
S						11.1		0	0.0
SSW						11.1		0	0.0
WSW						11.1		1	11.1
W						11.1		1	11.1
WNW						11.1		1	11.1
NNW						11.1		2	22.2
CALM						11.1		1	11.1
COL. TOTALS						55.5	33.3	11.1	11.0

750 METER LEVEL WINDS AFTERNOON MARCH,1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9- 25.0	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N						11.1		0	0.0
NNE						11.1		0	0.0
ENE						11.1		0	0.0
E						11.1		0	0.0
ESE						11.1		0	0.0
SSE						11.1		0	0.0
S						11.1		0	0.0
SSW						11.1		0	0.0
WSW						11.1		0	0.0
W						11.1		0	0.0
WNW						11.1		0	0.0
NNW						11.1		0	0.0
CALM						11.1		0	0.0
COL. TOTALS						12.5	50.0	12.5	25.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 FIVOL,BUBBLER & CONTIN MET

500 METER LEVEL WINDS MORNING MARCH,1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9- 25.0	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N						10.0		1	10.0
NNE						10.0		1	10.0
ENE						10.0		1	10.0
E						10.0		0	0.0
ESE						10.0		0	0.0
SSE						10.0		0	0.0
S						10.0		0	0.0
SSW						10.0		0	0.0
WSW						10.0		0	0.0
W						10.0		1	10.0
WNW						10.0		1	10.0
NNW						10.0		0	0.0
CALM						10.0		2	20.0
COL. TOTALS						20.0	70.0	10.0	11.6

500 METER LEVEL WINDS AFTERNOON MARCH,1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9- 25.0	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N						10.0		0	0.0
NNE						10.0		0	0.0
ENE						10.0		0	0.0
E						10.0		0	0.0
ESE						10.0		0	0.0
SSE						10.0		0	0.0
S						10.0		0	0.0
SSW						10.0		0	0.0
WSW						10.0		0	0.0
W						10.0		1	10.0
WNW						10.0		1	10.0
NNW						10.0		0	0.0
CALM						10.0		0	0.0
COL. TOTALS						37.5	12.5	12.5	12.5





# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

2000 METER LEVEL WINDS MORNNG MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECND	GREATER THAN	ROW COUNT	SUMMARY TOTAL	PERCENT	AVERAGE SPEED
N								0	0.0		
NNE								1	20.0		13.3
ENE								0	0.0		
E								0	0.0		
ESE								0	0.0		
SE								0	0.0		
SSE								0	0.0		
S								0	0.0		
SSW								0	0.0		
WSW				20.0	20.0			1	20.0		14.4
W				20.0	20.0			1	20.0		19.3
WNW				20.0	20.0			1	20.0		10.5
NW				20.0	20.0			1	20.0		21.9
NNW								0	0.0		
CALM								0	0.0		
COL. TOTALS				60.0	40.0			5			15.8

COL. TOTALS

2000 METER LEVEL WINDS AFTERNOON MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECND	GREATER THAN	ROW COUNT	SUMMARY TOTAL	PERCENT	AVERAGE SPEED
N								0	0.0		
NNE								0	0.0		
ENE								0	0.0		
E								0	0.0		
ESE								0	0.0		
SE								0	0.0		
SSE								0	0.0		
S								0	0.0		
SSW								0	0.0		
WSW				25.0	25.0			1	25.0		11.2
W				25.0	25.0			2	50.0		9.0
WNW								1	25.0		7.3
NW								1	25.0		
NNW								0	0.0		
CALM								0	0.0		
COL. TOTALS				25.0	50.0			4			9.1

COL. TOTALS

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

2500 METER LEVEL WINDS MORNNG MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECND	GREATER THAN	ROW COUNT	SUMMARY TOTAL	PERCENT	AVERAGE SPEED
N								0	0.0		
NNE								1	25.0		13.1
ENE								0	0.0		
E								0	0.0		
ESE								0	0.0		
SE								0	0.0		
SSE								0	0.0		
S								0	0.0		
SSW								0	0.0		
WSW								0	0.0		
W				25.0	25.0			0	0.0		19.2
WNW				25.0	25.0			2	50.0		21.3
NW								1	25.0		
NNW								0	0.0		
CALM								0	0.0		
COL. TOTALS				50.0	25.0			4			18.2

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON MARCH,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECND	GREATER THAN	ROW COUNT	SUMMARY TOTAL	PERCENT	AVERAGE SPEED
N								0	0.0		
NNE								0	0.0		
ENE								0	0.0		
E								0	0.0		
ESE								0	0.0		
SE								0	0.0		
SSE								0	0.0		
S								0	0.0		
SSW								0	0.0		
WSW								0	0.0		
W								0	0.0		
WNW								0	0.0		
NW								1	25.0		
NNW								0	0.0		
CALM								0	0.0		
COL. TOTALS				33.3	33.3			3			9.9

COL. TOTALS

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 HAVCL,BUBELER & CCNTIN MET

SURFACE WINDS MORNING APRIL, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY *****	RCM
N							TOTAL COUNT	
NNE							0	0.0
ENE							0	0.0
E	15.3						2	15.3
ESE							0	0.0
SSE	7.6						0	0.0
SSW	15.3	7.6					1	7.6
WSW							3	22.9
W	15.3	7.6					0	0.0
WNW							3	22.9
NNW	7.6						0	0.0
N	7.6			7.6			1	7.6
CALM							0	0.0
COL. TOTALS	76.3	15.2		7.6			13	2.1

SURFACE WINDS AFTERNOON APRIL, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY *****	RCM
N							TOTAL COUNT	
NNE							1	7.6
ENE							0	0.0
E							0	0.0
ESE							0	0.0
SSE							1	7.6
SSW		15.3					1	7.6
WSW							4	30.6
W							1	7.6
WNW							1	7.6
NNW							2	15.3
N				7.6			0	0.0
CALM							0	0.0
COL. TOTALS	7.6	15.3	68.6	7.6			13	6.5

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE ES#1 PIVCL,BUBELER & CCNTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR MARCH 1977

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	0	0
101- 250	0	0
251- 500	0	0
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	0	0
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	0.0	0.0

AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M) -00.00

-00.00



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 HIVOL,BUBELER & CONTIN MET

100 METER LEVEL WINDS MORNING APRIL,1977

DIRECTION	00.1 TU	03.0 TU	06.0 TU	09.9 TU	15.9 TU	25.0 TU	METERS/SECOND IC	GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	AVERAGE SPEED
N	7.6				7.6				2	15.2	7.1
NNE									0	0.0	
NNE	7.6								1	7.6	1.6
EENE	7.6								1	7.6	1.3
EENE									0	0.0	
ESE									0	0.0	
ESE									0	0.0	
SSE									1	7.6	3.3
SSE									0	0.0	
SSW									1	7.6	7.3
SSW									2	15.2	4.4
WSW									1	7.6	4.7
WSW									1	7.6	8.0
WSW									1	7.6	8.3
NNW									1	7.6	3.5
NNW									0	0.0	
NNW									1	7.6	1.8
CALM									0	0.0	

COL. TOTALS

30.4

38.1

22.2

7.6

4.6

100 METER LEVEL WINDS AFTERNOON APRIL,1977

DIRECTION	00.1 TU	03.0 TU	06.0 TU	09.9 TU	15.9 TU	25.0 TU	METERS/SECOND IC	GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	AVERAGE SPEED
N	7.6				7.6				2	15.2	8.8
NNE									0	0.0	
NNE									0	0.0	
EENE									0	0.0	
EENE									0	0.0	
ESE									0	0.0	
ESE									0	0.0	
SSE									1	7.6	9.3
SSE									2	15.2	8.8
SSW									1	7.6	5.6
SSW									0	0.0	
WSW									1	7.6	7.9
WSW									3	22.8	6.6
NNW									2	15.2	10.5
NNW									2	15.2	
NNW									0	0.0	
CALM									0	0.0	

COL. TOTALS

30.4

38.1

30.4

8.3

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 HIVOL,BUBELER & CONTIN MET

200 METER LEVEL WINDS MORNING APRIL,1977

DIRECTION	00.1 TU	03.0 TU	06.0 TU	09.9 TU	15.9 TU	25.0 TU	METERS/SECOND IC	GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	AVERAGE SPEED
N					7.6				1	7.6	11.8
NNE									0	0.0	
NNE									1	7.6	3.9
EENE									0	0.0	
EENE									0	0.0	
ESE									0	0.0	
ESE									0	0.0	
SSE									1	7.6	6.1
SSE									1	7.6	11.8
SSW									0	0.0	
SSW									3	22.8	19.5
WSW									0	0.0	
WSW									3	22.8	4.2
NNW									2	15.2	7.6
NNW									0	0.0	
NNW									0	0.0	
CALM									0	0.0	

COL. TOTALS

7.6

30.4

22.8

7.6

13

7.6

200 METER LEVEL WINDS AFTERNOON APRIL,1977

DIRECTION	00.1 TU	03.0 TU	06.0 TU	09.9 TU	15.9 TU	25.0 TU	METERS/SECOND IC	GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	AVERAGE SPEED
N					7.6				2	15.2	7.6
NNE									0	0.0	
NNE									0	0.0	
EENE									0	0.0	
EENE									0	0.0	
ESE									0	0.0	
ESE									0	0.0	
SSE									1	7.6	9.3
SSE									1	7.6	11.7
SSW									0	0.0	
SSW									2	15.2	5.5
WSW									2	15.2	7.5
WSW									1	7.6	6.6
NNW									2	15.2	17.5
NNW									2	15.2	
NNW									0	0.0	
CALM									0	0.0	

COL. TOTALS

22.8

45.8

22.8

7.6

13

8.5



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS LO - SCOBEE BS#1 FIVOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORN'G									
APRIL, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL	TOTAL COUNT	AVERAGE SPEED
N			9.0				1	1	17.2
NNE			9.0				1	1	8.1
ENE			0.0				0	0	
E			0.0				0	0	
ESE			0.0				0	0	6.0
SE			9.0				1	1	
SSE			0.0				0	0	
S			0.0				0	0	
SSW			9.0				2	2	17.3
WSW			9.0				1	1	14.4
W			9.0				1	1	16.6
WNW			9.0				1	1	13.6
NNW			9.0				2	2	16.7
NN			9.0				1	1	18.1
CALM			0.0				0	0	
COL. TOTALS	9.0	36.0	27.0	27.0	9.0		11	11	12.0

COL. TOTALS 9.0 36.0 27.0 27.0 9.0 11 11 12.0

750 METER LEVEL WINDS AFTERNOON

APRIL, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL	TOTAL COUNT	AVERAGE SPEED
N			9.0				2	2	10.1
NNE			0.0				0	0	
ENE			0.0				1	1	.7
E			0.0				0	0	
ESE			0.0				0	0	
SE			0.0				0	0	
SSE			9.0				1	1	10.6
SSW			9.0				1	1	15.9
WSW			9.0				2	2	16.9
W			9.0				3	3	4.7
WNW			0.0				0	0	
NNW			0.0				0	0	
NN			0.0				0	0	
CALM			0.0				0	0	
COL. TOTALS	36.0	27.0	18.0	9.0	9.0		11	11	6.0

COL. TOTALS 36.0 27.0 18.0 9.0 9.0 11 11 6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 FIVOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORN'G									
APRIL, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL	TOTAL COUNT	AVERAGE SPEED
N							0	0	0.0
NNE			11.1				1	1	11.1
ENE							0	0	0.0
E							0	0	0.0
ESE			11.1				1	1	11.1
SE							0	0	0.0
SSE							0	0	0.0
S							0	0	0.0
SSW			11.1				1	1	11.1
WSW			11.1				1	1	11.1
W			11.1				1	1	11.1
WNW			11.1				3	3	11.1
NNW							0	0	0.0
NN							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	22.2	33.3	22.2	22.2			9	9	11.1

COL. TOTALS 22.2 33.3 22.2 22.2 11.1

1000 METER LEVEL WINDS AFTERNOON

APRIL, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL	TOTAL COUNT	AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
E							0	0	0.0
ESE							0	0	0.0
SE							0	0	0.0
SSE			11.1				2	2	11.1
SSW			11.1				1	1	11.1
WSW			11.1				1	1	11.1
W			11.1				1	1	11.1
WNW			11.1				2	2	11.1
NNW							0	0	0.0
NN							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	55.5	11.1	11.1	22.2			9	9	5.3

COL. TOTALS 55.5 11.1 11.1 22.2 5.3



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 H1VCL,BUBBLER & CCNTIN MET

2000 METER LEVEL WINDS MORNING APRIL,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			12.5				1	12.5	8.2
ENE							0	0.0	
E							0	0.0	
ESE	12.5						0	0.0	
SSE							0	12.5	1.4
S							0	0.0	
SSW							0	0.0	
WSW			12.5				1	0.0	9.2
W				25.0	12.5		2	12.5	22.4
WNW		12.5					3	37.5	9.6
NNW							0	0.0	
NN							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	12.5	25.0	25.0	12.5		8		11.5

2000-METER LEVEL WINDS AFTERNOON APRIL,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE	16.6						1	16.6	1.8
E							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
S							1	16.6	65.1
SSW							0	0.0	
WSW				16.6			1	16.6	15.9
W				16.6			1	16.6	10.8
WNW				16.6			1	16.6	11.0
NNW							0	0.0	
NN							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6			66.4	16.6		6		19.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 H1VCL,BUBBLER & CCNTIN MET

1500 METER LEVEL WINDS MORNING APRIL,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			12.5				1	12.5	6.5
ENE							0	0.0	
E							0	0.0	
ESE		12.5					1	12.5	4.9
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
WSW				12.5			1	12.5	10.1
W			25.0		12.5		3	37.5	10.3
WNW			12.5				2	25.0	19.3
NNW							0	0.0	
NN							0	0.0	
CALM							0	0.0	
COL. TOTALS		12.5	50.0	12.5	25.0		8		9.9

1500 METER LEVEL WINDS AFTERNOON APRIL,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1				1	11.1	3.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							1	11.1	26.6
WSW							1	11.1	16.9
W	11.1		11.1	22.2			2	22.2	16.8
WNW		22.2	11.1				2	22.2	6.7
NNW							1	11.1	10.2
NN							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	33.3	11.1	33.3			9		9.2

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

500 METER LEVEL WINDS MORNING				APRIL, 1977			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	25.0 TO 30.0	GREATER THAN 30.0
N							
NE							
E							
SE							
S							
SW							
WSW							
WNW							
NNW							
CALM							
OL. TOTALS	14.2	14.2	28.4	42.7	14.2		

500 METER LEVEL WINDS AFTERNOON				APRIL, 1977			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	25.0 TO 30.0	GREATER THAN 30.0
N							
NE							
E							
SE							
S							
SW							
WSW							
WNW							
NNW							
CALM							
OL. TOTALS	14.2	14.2	28.4	42.7	14.2		

500 METER LEVEL WINDS MORNING				APRIL, 1977			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	25.0 TO 30.0	GREATER THAN 30.0
N							
NE							
E							
SE							
S							
SW							
WSW							
WNW							
NNW							
CALM							
OL. TOTALS	25.0	25.0	50.0	50.0			

# FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

MORNING				APRIL 1977			
THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000
001-100	5.8	11.7					
101-250		5.8	5.8				
251-500		5.8					
501-750							
TOTAL	35.2	11.6	17.5	5.8	23.5	5.8	
NO INVERSION							
TOTAL NO. OF OCCURENCES	17						

AFTERNOON				APRIL 1977			
THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000
001-100	5.8						
101-250		5.8					
251-500							
501-750							
TOTAL	11.7	5.8					
NO INVERSION							
TOTAL NO. OF OCCURENCES	17						

MORNING				APRIL 1977			
THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000
001-100	5.8	11.7					
101-250		5.8					
251-500							
501-750							
TOTAL	11.7	17.5					
NO INVERSION							
TOTAL NO. OF OCCURENCES	17						

AFTERNOON				APRIL 1977			
THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000
001-100	5.8						
101-250		5.8					
251-500							
501-750							
TOTAL	11.7	5.8					
NO INVERSION							
TOTAL NO. OF OCCURENCES	17						

MORNING				APRIL 1977			
THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000
001-100	5.8	11.7					
101-250		5.8	5.8				
251-500		5.8					
501-750							
TOTAL	11.7	17.5					
NO INVERSION							
TOTAL NO. OF OCCURENCES	17						

AFTERNOON				APRIL 1977			
THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000
001-100	5.8						
101-250		5.8					
251-500							
501-750							
TOTAL	11.7	5.8					
NO INVERSION							
TOTAL NO. OF OCCURENCES	17						





FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBREY BS#1 HIVOL,BUBBLER & CONTIN MET

MAY,1977									
100 METER LEVEL WINDS MCRNING									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW	TOTAL	AVERAGE SPEED
N	8.3						1	8.3	2.8
NNE							0	0.0	
ENE	8.3						1	8.3	5.8
E							1	8.3	2.8
ESE							0	0.0	
SE	16.6		8.3				3	24.9	4.5
SSE							0	0.0	
SSW	8.3						1	8.3	1.2
WSW			8.3				1	8.3	6.8
W			8.3				1	8.3	8.1
NNW			8.3				1	8.3	6.7
NW	8.3						1	8.3	2.7
NNN							0	0.0	
CALM							0	0.0	8.2
COL. TOTALS	49.8	8.3	41.3				12		4.8

MAY,1977									
100 METER LEVEL WINDS AFTERNOON									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW	TOTAL	AVERAGE SPEED
N			8.3				1	8.3	5.9
NNE							0	0.0	
ENE							0	0.0	
E	8.3						2	16.6	3.5
ESE							1	8.3	10.1
SE			8.3				1	8.3	13.4
SSE			8.3				1	8.3	
SSW							0	0.0	
WSW							4	32.2	8.9
W			8.3				1	8.3	6.6
NNW			8.3				1	8.3	7.3
NW							0	0.0	
NNN							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	8.3	49.8	16.6	8.3		12		7.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBREY BS#1 HIVOL,BUBBLER & CCNTIN MET

MAY,1977									
200 METER LEVEL WINDS MORNING									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW	TOTAL	AVERAGE SPEED
N							1	8.3	12.6
NNE							0	0.0	
ENE			8.3				2	16.6	7.1
E	8.3						1	8.3	2.8
ESE							0	0.0	
SE							0	0.0	
SSE	8.3		8.3				4	32.2	6.7
SSW							0	0.0	
WSW			8.3				1	8.3	8.5
W			8.3				1	8.3	12.1
NNW							1	8.3	6.1
NW							0	0.0	
NNN	8.3						1	8.3	1.9
CALM							0	0.0	
COL. TOTALS	24.9	16.6	33.2	24.9			12		7.0

MAY,1977									
200 METER LEVEL WINDS AFTERNOON									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCW	TOTAL	AVERAGE SPEED
N							1	8.3	14.6
NNE							0	0.0	
ENE							0	0.0	
E			8.3				1	8.3	3.0
ESE							0	0.0	
SE	8.3						2	16.6	7.6
SSE	8.3						1	8.3	13.4
SSW							0	0.0	
WSW							4	32.2	8.3
W			8.3				1	8.3	8.8
NNW			8.3				0	0.0	
NW							0	0.0	
NNN							0	0.0	
CALM							0	0.0	
COL. TOTALS	16.6	24.9	16.6	33.2	8.3		12		8.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CU - SCOBEE BS#1 H1VOL,BUEBLER & CCNTIN MET

500 METER LEVEL WINDS MORNING MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND IC	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N								0	1	17.3
NNE								1	1	11.1
NNE								1	1	11.1
ENE								1	1	11.1
ENE								1	1	9.9
ESE								0	0	10.0
ESE								1	1	11.1
SSE								2	2	10.2
SSE								0	0	10.0
SSW								1	1	5.7
SSW								0	0	10.0
WSW								0	0	10.0
WSW								1	1	5.6
NNW								0	0	10.0
NNW								0	0	10.0
NNW								0	0	10.0
CALM								0	0	0.0
CCL. TOTALS	44.4	22.2	22.2	11.1				9		8.4

500 METER LEVEL WINDS AFTERNOON MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND IC	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N								0	1	20.6
NNE								1	1	9.0
NNE								0	0	9.0
ENE								0	0	10.5
ENE								1	1	1.4
ESE								0	0	8.8
ESE								2	2	9.0
SSE								0	0	20.5
SSE								1	1	6.1
SSW								2	2	18.0
SSW								0	0	0.0
WSW								0	0	0.0
WSW								0	0	0.0
NNW								0	0	0.0
NNW								0	0	0.0
CALM								0	0	0.0
CCL. TOTALS	18.0	9.0	18.0	27.1	27.1			11		11.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CU - SCOBEE BS#1 H1VOL,BUEBLER & CCNTIN MET

300 METER LEVEL WINDS MORNING MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND IC	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N								1	1	10.0
NNE								1	1	10.0
NNE								1	1	10.0
ENE								2	2	10.0
ENE								0	0	10.0
ESE								2	2	10.0
ESE								0	0	10.0
SSE								1	1	10.0
SSE								0	0	10.0
SSW								1	1	10.0
SSW								0	0	10.0
WSW								1	1	10.0
WSW								0	0	10.0
NNW								0	0	10.0
NNW								0	0	10.0
NNW								0	0	10.0
CALM								0	0	0.0
CCL. TOTALS	10.0	30.0	20.0	30.0	10.0			10		8.9

300 METER LEVEL WINDS AFTERNOON MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND IC	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N								1	1	8.3
NNE								0	0	0.0
NNE								0	0	0.0
ENE								0	0	0.0
ENE								0	0	0.0
ESE								1	1	4.1
ESE								2	2	7.2
SSE								0	0	6.6
SSE								0	0	0.0
SSW								3	3	9.9
SSW								1	1	12.7
WSW								2	2	10.3
WSW								0	0	0.0
NNW								0	0	0.0
NNW								0	0	0.0
CALM								0	0	0.0
CCL. TOTALS	24.9	8.3	16.6	41.5	8.3			12		9.0

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING MAY,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE	11.1	11.1		11.1			3	3.0	5.9
NNE							0	0.0	
EENE			11.1				1	1.0	9.1
ESE							0	0.0	
ESE							0	0.0	
SSES							0	0.0	
SSES	11.1	11.1	11.1	11.1			2	2.0	6.5
SSW							0	0.0	9.3
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
NNW		11.1					1	1.0	6.1
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	22.2	44.4	22.2			9		7.2

750 METER LEVEL WINDS AFTERNOON MAY,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							1	1.0	18.2
NNE							0	0.0	
EENE				9.0			1	1.0	10.3
ESE	9.0						1	1.0	6.0
ESE							0	0.0	
SSES		9.0	9.0	9.0			3	3.0	13.2
SSES							0	0.0	
SSW		9.0					1	1.0	3.4
SSW							0	0.0	
WSW			9.0	9.0	18.1		2	2.0	43.5
WSW							0	0.0	9.8
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	18.0	9.0	27.0	18.0	18.1	11		16.2

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING MAY,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	1.0	4.4
NNE	12.5						1	1.0	4.4
NNE							0	0.0	
EENE							0	0.0	
ESE							2	2.0	7.2
ESE							0	0.0	
SSES			12.5	12.5			1	1.0	6.1
SSES							1	1.0	8.7
SSW							1	1.0	8.2
SSW							0	0.0	10.6
WSW							0	0.0	
WSW							0	0.0	
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	25.0	37.5	25.0			8		6.6

1000 METER LEVEL WINDS AFTERNOON MAY,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
EENE							0	0.0	
ESE	12.5						1	1.0	4.9
ESE							0	0.0	1.8
SSES							1	1.0	16.0
SSES	12.5						2	2.0	12.0
SSW							0	0.0	
SSW							0	0.0	
WSW							1	1.0	30.9
WSW							1	1.0	8.4
NNW							0	0.0	14.3
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	12.5	12.5	25.0	12.5	12.5	8		11.5



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 H1VOL,BUBELER & CONTIN MET

2000 METER LEVEL WINDS MORNING MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREAT- ER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE				12.5			1	12.5	10.7
ESE							1	0.0	
SSE			12.5				1	12.5	9.4
SSE			12.5				2	25.0	11.8
SSW			12.5				2	25.0	9.8
SSW							0	0.0	
WSW							0	0.0	
WSW			12.5				1	12.5	11.7
NNW							1	12.5	6.7
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0	37.5	12.5				8		10.2

2000 METER LEVEL WINDS AFTERNOON MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREAT- ER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE			20.0				1	20.0	7.6
ESE							0	0.0	
ESE							0	0.0	
SSE			20.0				1	20.0	3.2
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW				20.0			1	20.0	14.1
NNW							0	0.0	
NNW			20.0				2	40.0	2.8
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	40.0	20.0	20.0			5		6.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 H1VOL,BUBELER & CONTIN MET

1500 METER LEVEL WINDS MORNING MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREAT- ER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE				12.5			1	12.5	12.3
ESE							0	0.0	
ESE							0	0.0	
SSE			12.5				2	25.0	11.4
SSE			25.0				2	25.0	9.3
SSW							0	0.0	
SSW							0	0.0	
WSW							1	12.5	10.7
WSW							0	0.0	
NNW							0	0.0	
NNW			12.5				2	25.0	6.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5		37.5	50.0			8		9.7

1500 METER LEVEL WINDS AFTERNOON MAY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREAT- ER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	12.5	1.5
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							2	25.0	6.1
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							1	12.5	11.7
NNW							1	12.5	15.0
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	25.0	25.0	37.5	12.5			8		8.8

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

MAY, 1977									
2500 METER LEVEL WINDS MORNING					MAY, 1977				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	40.0	60.0					0	0	0.0

MAY, 1977									
2500 METER LEVEL WINDS AFTERNOON					MAY, 1977				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	20.0	40.0	20.0	20.0			0	0	0.0

# FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

MAY 1977 MORNING									
2500 METER LEVEL WINDS MORNING					MAY 1977 MORNING				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	40.0	60.0					0	0	0.0

MAY 1977 AFTERNOON									
2500 METER LEVEL WINDS AFTERNOON					MAY 1977 AFTERNOON				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	20.0	40.0	20.0	20.0			0	0	0.0

# FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

MAY 1977 MORNING									
2500 METER LEVEL WINDS MORNING					MAY 1977 MORNING				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	40.0	60.0					0	0	0.0

MAY 1977 AFTERNOON									
2500 METER LEVEL WINDS AFTERNOON					MAY 1977 AFTERNOON				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	20.0	40.0	20.0	20.0			0	0	0.0

# FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

MAY 1977 MORNING									
2500 METER LEVEL WINDS MORNING					MAY 1977 MORNING				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	40.0	60.0					0	0	0.0

MAY 1977 AFTERNOON									
2500 METER LEVEL WINDS AFTERNOON					MAY 1977 AFTERNOON				
DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	IC	THAN	AVERAGE
02.9	05.9	09.9	15.9	25.0	IC	THAN	IC	THAN	SPEED
NNE							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
ESE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
NNW							0	0	0.0
NNW							0	0	0.0
CALM							0	0	0.0
COL. TOTALS	20.0	40.0	20.0	20.0			0	0	0.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CU - SCOEY ES#1 FIVOL, BUBELER & CCNTIN MET

JUNE, 1977

SURFACE WINDS MORNING

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							0	0.0	1.4
NNE	7.6						1	7.6	
ENE							0	0.0	
E	7.6	7.6					1	7.6	.9
ESE							2	15.2	3.1
SE							0	0.0	
SSE							0	0.0	
SSW	7.6						1	7.6	1.8
WSW	15.3						2	15.3	.4
WS	7.6						1	7.6	
WNW	7.6	7.6					2	15.2	2.4
NNW	7.6						1	7.6	.4
N	15.3						2	15.3	.6
CALM							0	0.0	
COL. TOTALS	83.8	15.2					13		1.4

JUNE, 1977

SURFACE WINDS AFTERNOON

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							2	15.2	4.5
NNE	7.6		7.6				0	0.0	
ENE							0	0.0	
E	7.6						1	7.6	.4
ESE	7.6	7.6					2	15.2	4.8
SE	15.3						1	15.3	2.7
SSE	7.6						1	7.6	2.5
SSW							0	0.0	1.8
WSW							0	0.0	
WS							0	0.0	
WNW							1	7.6	3.6
NNW			7.6				0	0.0	6.1
N							2	15.2	
CALM							0	0.0	
COL. TOTALS	53.3	22.8	22.8				13		3.6

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CU - SCOEY ES#1 FIVOL, BUBELER & CCNTIN MET

MAY 1977

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR

MIXING FLIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
C- 100	2	0
101- 250	0	0
251- 500	2	2
501- 750	0	1
751-1000	0	0
1001-1500	0	1
>1500	1	2
TOTAL	5	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	5.4	11.1
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)	-00.41	-00.51



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VGL,BUBBLER & CCNTIN MET

JUNE, 1977									
100 METER LEVEL WINDS MCRNING									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	7.0						1	7.6	1.8
NNE							0	0.0	
ENE		7.6					1	7.6	6.3
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE	7.6		7.6	15.3			3	22.9	7.9
SSW	7.6						1	7.6	6.4
SW		7.6					1	7.6	2.1
WSW							2	15.2	5.1
W							0	0.0	
WNW	7.6		7.6				2	15.2	6.0
NNW	7.6						1	7.6	2.6
N		7.6					1	7.6	3.5
CALM							0	0.0	
COL. TOTALS	38.0	15.2	30.4	15.3			13		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VGL,BUBBLER & CCNTIN MET

JUNE, 1977									
100 METER LEVEL WINDS AFTERNOON									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							3	22.8	6.6
NNE							0	0.0	
ENE	7.6						1	7.6	2.0
E							0	0.0	
ESE							0	0.0	
SE							1	7.6	4.3
SSE	7.6		7.6				2	15.2	7.9
SSW	7.6						1	7.6	8.4
SW							0	0.0	
WSW							0	0.0	
W							1	7.6	6.1
WNW							0	0.0	
NNW							0	0.0	
N							0	0.0	
CALM							0	0.0	
COL. TOTALS	7.6	38.0	15.2	38.1			13		7.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VGL,BUBBLER & CCNTIN MET

JUNE, 1977									
200 METER LEVEL WINDS MCRNING									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							1	7.6	7.7
ENE			7.6				1	7.6	2.4
E							0	0.0	
ESE							0	0.0	
SE							2	15.2	8.9
SSE	7.6		7.6	7.6			2	15.2	11.8
SSW							1	7.6	10.4
SW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							2	15.2	9.5
NNW							1	7.6	4.8
N							0	0.0	
CALM							0	0.0	
COL. TOTALS	7.6	30.4	30.5	22.8	7.6		13		8.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

JUNE, 1977									
200 METER LEVEL WINDS AFTERNOON									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							3	22.9	6.5
NNE							0	0.0	
ENE							1	7.6	2.1
E							0	0.0	
ESE							0	0.0	
SE							1	7.6	3.7
SSE	7.6		7.6	7.6			2	15.2	6.1
SSW							1	7.6	18.6
SW							0	0.0	
WSW							0	0.0	
W							1	7.6	13.0
WNW							0	0.0	
NNW							0	0.0	
N							0	0.0	
CALM							0	0.0	
COL. TOTALS	7.6	30.5	53.3				13		8.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VGL,BUBBLER & CONTIN MET

500 METER LEVEL WINDS MORNING

JUNE,1977

DIRECTION	00.1 IC	03.0 TO	06.0 IC	10.0 TO	15.9 IC	25.0 TO	GREATER THAN	***** SUMMARY	***** TOTAL	***** PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
E								0	0	0.0	
ESE								0	0	0.0	
SSE								1	1	10.0	19.5
SSW								3	3	30.0	17.2
WSW								2	2	20.0	17.8
W								0	0	0.0	
WSW								0	0	0.0	
W								1	1	10.0	1.8
NNW								0	0	0.0	
N								1	1	10.0	16.3
NNW								1	1	10.0	11.5
NNW								1	1	10.0	11.9
CALM								0	0	0.0	

CALM

COL. TOTALS

10.0 10.0 50.0 30.0

JUNE,1977

13.0

500 METER LEVEL WINDS AFTERNOON

DIRECTION	00.1 IC	03.0 TO	06.0 IC	10.0 TO	15.9 IC	25.0 TO	GREATER THAN	***** SUMMARY	***** TOTAL	***** PERCENT	***** AVERAGE SPEED
N								2	2	15.2	6.1
NNE								1	1	7.6	5.8
ENE								0	0	0.0	
E								1	1	7.6	7.0
ESE								0	0	0.0	
SSE								1	1	7.6	10.8
SSW								2	2	15.2	8.6
WSW								0	0	0.0	13.2
W								0	0	0.0	
WSW								1	1	7.6	13.6
W								0	0	0.0	
NNW								0	0	0.0	
N								2	2	15.2	24.0
NNW								1	1	7.6	5.1
CALM								0	0	0.0	

CALM

COL. TOTALS

7.6 30.4 15.2 22.8 15.2

7.6

11.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VGL,BUBBLER & CONTIN MET

300 METER LEVEL WINDS MORNING

JUNE,1977

DIRECTION	00.1 IC	03.0 TO	06.0 IC	10.0 TO	15.9 IC	25.0 TO	GREATER THAN	***** SUMMARY	***** TOTAL	***** PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								1	1	9.0	7.2
ENE								0	0	0.0	
E								0	0	0.0	
ESE								0	0	0.0	
SSE								2	2	16.0	10.3
SSW								2	2	16.0	12.1
WSW								0	0	0.0	11.0
W								0	0	0.0	7.3
WSW								0	0	0.0	
W								0	0	0.0	
NNW								1	1	9.0	14.8
N								1	1	9.0	5.6
NNW								1	1	9.0	7.7
CALM								0	0	0.0	

CALM

COL. TOTALS

9.0 18.0 27.0 27.0 18.0

JUNE,1977

5.6

300 METER LEVEL WINDS AFTERNOON

DIRECTION	00.1 IC	03.0 TO	06.0 IC	10.0 TO	15.9 IC	25.0 TO	GREATER THAN	***** SUMMARY	***** TOTAL	***** PERCENT	***** AVERAGE SPEED
N								1	1	7.6	4.9
NNE								1	1	7.6	10.6
ENE								0	0	0.0	12.5
E								0	0	0.0	
ESE								1	1	7.6	6.8
SSE								2	2	15.2	4.8
SSW								1	1	7.6	16.8
WSW								0	0	0.0	18.0
W								0	0	0.0	
WSW								0	0	0.0	
W								0	0	0.0	
NNW								1	1	7.6	17.2
N								0	0	0.0	15.2
NNW								1	1	7.6	3.9
CALM								0	0	0.0	

CALM

COL. TOTALS

15.2 15.2 30.5 15.2 22.8

JUNE,1977

5.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VCL,BUBBLER & CCNTIN MET

1000 METER LEVEL WINDS MORNING JUNE, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	25.0	12.5	50.0			8		14.0

1000 METER LEVEL WINDS AFTERNOON JUNE, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
N							1	0.0	14.0
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	27.1	18.0	27.0	18.0		11		9.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VCL,BUBBLER & CCNTIN MET

750 METER LEVEL WINDS MORNING JUNE, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	10.0	10.0	40.0	30.0	10.0		10		14.3

750 METER LEVEL WINDS AFTERNOON JUNE, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
N							2	15.2	11.5
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							1	7.6	5.2
ESE							1	7.6	5.2
SSE							0	0.0	
SSE							0	0.0	
SSW							3	22.9	10.8
SSW							2	15.2	23.4
WSW							0	0.0	
WSW							0	0.0	
NNW							0	0.0	
NNW							0	0.0	
NNW							1	7.6	8.5
NNW							1	7.6	4.3
NNW							2	15.2	19.3
CALM							0	0.0	
COL. TOTALS	15.2	22.8	15.2	30.5	7.6		13		12.4



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CU - SCOBEE ES#1 FIVOL,BUBBLER & CCNIN MET

2000 METER LEVEL WINDS MCFNINE JUNE,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N							1	14.2
NNE							0	0.0
NNE							0	0.0
ENE							0	0.0
ENE							0	0.0
ESE							0	0.0
ESE							0	0.0
SSE							0	0.0
SSE							1	14.2
S							0	0.0
SSW							0	0.0
SSW							1	14.2
WSW							0	0.0
WSW							1	14.2
NNW							2	28.4
NNW							2	28.4
NNW							0	0.0
CALM							0	0.0

COL. TOTALS 14.2 28.4 28.4 14.2 14.2 11.8

2000 METER LEVEL WINDS AFTERNCCN JUNE,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N							0	0.0
NNE							0	0.0
NNE							0	0.0
ENE							0	0.0
ENE							0	0.0
ESE							0	0.0
ESE							0	0.0
SSE							1	12.5
SSE							1	12.5
S							1	12.5
SSW							2	25.0
SSW							2	25.0
WSW							1	12.5
WSW							1	12.5
NNW							0	0.0
NNW							0	0.0
CALM							0	0.0

COL. TOTALS 25.0 25.0 37.5 12.5 12.5 10.5

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CU - SCOBEE ES#1 FIVOL,BUBBLER & CCNIN MET

1500 METER LEVEL WINDS MCFNINE JUNE,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N							1	12.5
NNE							0	0.0
NNE							0	0.0
ENE							0	0.0
ENE							0	0.0
ESE							0	0.0
ESE							0	0.0
SSE							2	25.0
SSE							1	12.5
S							0	0.0
SSW							1	12.5
SSW							1	12.5
WSW							1	12.5
WSW							1	12.5
NNW							0	0.0
NNW							0	0.0
CALM							0	0.0

COL. TOTALS 25.0 50.0 25.0 12.3

1500 METER LEVEL WINDS AFTERNCCN JUNE,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N							0	0.0
NNE							0	0.0
NNE							0	0.0
ENE							0	0.0
ENE							0	0.0
ESE							0	0.0
ESE							0	0.0
SSE							2	20.0
SSE							1	20.0
S							1	20.0
SSW							1	20.0
SSW							2	20.0
WSW							1	20.0
WSW							2	20.0
NNW							0	0.0
NNW							0	0.0
CALM							0	0.0

COL. TOTALS 10.0 20.0 50.0 10.0 10.0 7.9

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCCBY BS#1 HIVOL, BUBELER & CCNTIN MET

2500 METER LEVEL WINDS MORNING

JUNE, 1977

DIRECTION	***** SUMMARY *****					
	WIND SPEEDS		PETERS/SECND	ROW TOTAL		AVERAGE
	TO	FROM	IC	IC	COUNT	SPEED
00-1	03.0	06.0	10.0	16.0		
02-9	05.9	09.9	15.9	25.0	25.0	

FREQUENCY SUMMARY OF INVERSIIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCGEY ES#1 PIVOL, BUBELER & CCNTIN MET

MONTH OF JUNE 1977 MORNING

THICKNESS (METERS)	SFC	***** INVERTSON BASE HEIGHT *****			***** (METERS) *****			TOTAL	
		001 IU	101 IU	250 IU	501 IU	751 IU	1501 IU	2501 IU	3000 IU
001-100	3.7	3.7	3.7	11.1	3.7	7.4	3.7		33.3
101-250	7.4		7.4	3.7	7.4	3.7	7.4	3.7	40.7
251-500	18.5			3.7	3.7	3.7			25.9

COL. TOTALS 16.6 49.3

JUNE, 1977

DIRECTION	***** WIND SPEEDS *****		METERS/SECOND		***** SUMMARY *****	
	TO	FROM	TO	FROM	TOTAL	AVERAGE
00.1	03.0	06.0	10.0	16.0	10.0	16.0
02.9	05.9	09.9	15.5	25.0	25.0	25.0
					COUNT	PERCENT

MONTH OF JUNE 1977 AFTERNOON

THICKNESS (METERS)	SFC	***** INVERSION	***** BASE HEIGHT	***** (METERS)	***** 2501	***** 2501	***** THA	***** TOTAL
001-100	1.5	1.5	7.9	3.1	17.4	11.1	9.5	72.6
101-250				4.7	3.1	3.1	1.5	21.9
251-500		1.5						4.6

CALM

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CCNTIN MET

SURFAC. WINDS MCRNING JULY, 1977

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	GREATER THAN 25-0	***** TOTAL COUNT	***** TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
N							1	8-3	0-9	
NNE							0	0-0		
ENE							0	0-0		
E							0	0-0		
ESE			8-3				2	16-6	3-8	
SSE							0	0-0		
S							0	0-0		
SSW	25-0						3	25-0	1-3	
WSW	8-3						1	8-3	0-4	
WNW							0	0-0		
NNW	16-6						0	0-0		
N	18-6						2	18-6	1-9	
W	8-3						1	8-3		
CALM							0	0-0		
COL. TOTALS	91-4		8-3				12			1-6

SURFACE WINDS AFTERNOON JULY, 1977

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	GREATER THAN 25-0	***** TOTAL COUNT	***** TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
N							2	15-3	1-3	
NNE							0	0-0		
ENE	7-6						0	0-0		
E	7-6						1	7-6	1-9	
ESE		7-6					1	7-6	3-6	
SSE							0	0-0		
S							0	0-0		
SSW	7-6						1	7-6	2-7	
WSW	7-6						1	7-6	2-9	
WNW	7-6						1	7-6	4-5	
N							0	0-0	2-7	
NNW	7-6		7-6				0	0-0		
N							3	22-8	3-9	
CALM							0	0-0		
COL. TOTALS	68-5	22-8	7-6				13			2-6

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CCNTIN MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JUNE 1977

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	6	0
101- 250	2	0
251- 500	3	2
501- 750	1	1
751-1000	1	2
1001-1500	0	2
>1500	0	6
TOTAL	13	13
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	6-4	10-2

AVERAGE LAPSE RATE  
BELOW FIRST INVER.  
(DEG C /100M) -03-23

-01-36



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING

JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** TOTAL COUNT	***** SUMMARY AVERAGE SPEED
N							0.0	0	0.0	
NNE							0.0	0	0.0	
ENE							0.0	0	0.0	
E							0.0	0	0.0	
ESE			8.3		8.3		16.6	2	16.6	10.6
SSE							0.0	0	0.0	
S	8.3	8.3					16.6	2	16.6	3.7
SSW	8.3	8.3					16.6	2	16.6	2.6
WSW							0.0	0	0.0	1.2
W							0.0	0	0.0	
WNW							0.0	0	0.0	
NNW	8.3	8.3	16.6	8.3			24.9	3	24.9	6.9
N							0.0	0	0.0	3.8
CALM							0.0	0	0.0	
COL. TOTALS	33.2	33.2	24.9	8.3				12		5.2

100 METER LEVEL WINDS AFTERNOON

JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** TOTAL COUNT	***** SUMMARY AVERAGE SPEED
N							7.6	1	7.6	3.0
NNE	7.6						7.6	1	7.6	2.5
ENE	7.6						7.6	1	7.6	2.1
E							7.6	1	7.6	4.5
ESE			7.6				7.6	1	7.6	6.8
SSE							7.6	1	7.6	2.4
S	7.6						7.6	1	7.6	5.1
SSW							15.2	2	15.2	2.3
WSW	15.3						15.3	2	15.3	2.3
W							0.0	0	0.0	
WNW							0.0	0	0.0	
NNW							22.8	3	22.8	8.4
N							0.0	0	0.0	
CALM							0.0	0	0.0	
COL. TOTALS	38.1	30.4	22.8	7.6				13		4.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING

JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** TOTAL COUNT	***** SUMMARY AVERAGE SPEED
N							0.0	0	0.0	
NNE							0.0	0	0.0	
ENE							0.0	0	0.0	
E							0.0	0	0.0	
ESE							0.0	0	0.0	
SSE			8.3		8.3		16.6	2	16.6	2.9
S							0.0	0	0.0	
SSW							0.0	0	0.0	
WSW							0.0	0	0.0	
W							0.0	0	0.0	
WNW							0.0	0	0.0	
NNW							0.0	0	0.0	
N							0.0	0	0.0	
CALM							0.0	0	0.0	
COL. TOTALS	8.3	24.9	33.2	24.9	8.3			12		8.4

200 METER LEVEL WINDS AFTERNOON

JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** TOTAL COUNT	***** SUMMARY AVERAGE SPEED
N							0.0	0	0.0	
NNE							0.0	0	0.0	
ENE							0.0	0	0.0	
E							0.0	0	0.0	
ESE							0.0	0	0.0	
SSE							0.0	0	0.0	
S							0.0	0	0.0	
SSW							0.0	0	0.0	
WSW							0.0	0	0.0	
W							0.0	0	0.0	
WNW							0.0	0	0.0	
NNW							0.0	0	0.0	
N							0.0	0	0.0	
CALM							0.0	0	0.0	
COL. TOTALS	38.0	30.5	22.8	7.6				13		5.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CC - SCOBEE ES#1 FIVOL, BUBELER & CCNTIN MET

500 METER LEVEL WINDS MORNING JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS PETERS/SECOND	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N									
NNE									
ENE									
E									
ESE									
SSE									
S									
SSW									
WSW									
NNW									
NN									
CALM									
CCL. TOTALS	18.0	18.1	27.1	27.1	9.0	11	13.6		

500 METER LEVEL WINDS AFTERNOON JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS PETERS/SECOND	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N									
NNE									
ENE									
E									
ESE									
SSE									
S									
SSW									
WSW									
NNW									
NN									
CALM									
CCL. TOTALS	22.0	38.0	22.9	15.2	8.0	13	8.0		

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CC - SCOBEE ES#1 FIVOL, BUBELER & CCNTIN MET

300 METER LEVEL WINDS MORNING JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS PETERS/SECOND	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N									
NNE									
ENE									
E									
ESE									
SSE									
S									
SSW									
WSW									
NNW									
NN									
CALM									
CCL. TOTALS	18.0	18.0	45.2	18.0	11	11.3			

300 METER LEVEL WINDS AFTERNOON JULY, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS PETERS/SECOND	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N									
NNE									
ENE									
E									
ESE									
SSE									
S									
SSW									
WSW									
NNW									
NN									
CALM									
CCL. TOTALS	30.4	30.4	22.8	15.2	13	6.6			

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBAY BS#1 H1VOL-BUBBLER & CCNTIN MET

750 METER LEVEL WINDS MORNNG									
JULY, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT
N							2	18.1	14.6
NNE		9.0		18.1			1	9.0	3.1
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE			9.0	9.0			1	9.0	11.1
SSE				9.0			1	9.0	8.8
S							1	9.0	11.7
SSW							0	0.0	
WSW		9.0	9.0	9.0			3	27.0	12.6
W							0	0.0	
WNW		9.0					1	9.0	6.2
NW							0	0.0	
NNW							1	9.0	17.3
CALM							0	0.0	
CCL. TOTALS	18.0	18.0	45.1	18.0			11		11.3

750 METER LEVEL WINDS AFTERNOON									
JULY, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT
N							1	7.6	5.1
NNE	7.6						1	7.6	0.0
ENE	7.6						1	7.6	1.7
E							0	0.0	
ESE							1	7.6	1.4
SE							0	0.0	
SSE							1	7.6	3.3
S							1	7.6	3.4
SSW							1	7.6	3.1
WSW	7.6						1	7.6	2.6
W							0	0.0	
WNW			7.6		7.6		1	7.6	20.0
NW							0	0.0	
NNW			7.6		7.6		1	7.6	8.0
CALM							0	0.0	
CCL. TOTALS	22.8	45.6	15.2		15.2		13		6.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBAY BS#1 H1VOL-BUBBLER & CCNTIN MET

1000 METER LEVEL WINDS MORNNG									
JULY, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT
N							0	0.0	
NNE		9.0	9.0				2	18.0	0.0
ENE							1	9.0	6.6
E							0	0.0	
ESE							0	0.0	
SE				9.0			1	9.0	10.1
SSE				9.0			1	9.0	10.1
S				9.0			1	9.0	11.8
SSW							0	0.0	
WSW					9.0		1	9.0	17.3
W			18.1				1	18.1	11.1
WNW							2	18.0	6.6
NW							0	0.0	
NNW			9.0				1	9.0	15.7
CALM							0	0.0	
CCL. TOTALS	9.0	36.1	45.0	9.0			11		9.9

1000 METER LEVEL WINDS AFTERNOON									
JULY, 1977									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT
N							1	8.3	7.2
NNE			8.3				1	8.3	0.0
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							1	8.3	4.1
SSW							2	16.6	3.7
WSW							2	16.6	4.4
W							1	8.3	12.2
WNW							1	8.3	8.0
NW							1	8.3	17.2
NNW							0	0.0	
CALM							0	0.0	
CCL. TOTALS	24.9	24.9	24.9	16.6	8.3		12		6.9





FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VCL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING

JULY,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** TOTAL PERCENT	***** AVERAGE SPEED
N							0	0	0.0	
NNE							0	0	0.0	
ENE							0	0	0.0	
E							0	0	0.0	
ESE							0	0	0.0	
SSE							0	0	0.0	
SSW			12.5				0	0	0.0	12.9
WSW			12.5	12.5			0	0	0.0	16.1
W			12.5	12.5			1	2	11.3	11.3
WNW			12.5				0	0	0.0	12.5
NW							1	0	0.0	6.3
NNW							1	1	12.5	13.3
CALM							0	0	0.0	
CCL. TOTALS			37.5	37.5	25.0		8			12.0

JULY,1977

2500 METER LEVEL WINDS AFTERNOON

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** TOTAL PERCENT	***** AVERAGE SPEED
N							0	0	0.0	
NNE							0	0	0.0	
ENE							0	0	0.0	
E							0	0	0.0	
ESE							0	0	0.0	
SSE							0	0	0.0	
SSW							0	0	0.0	
WSW							1	1	16.6	2.6
W							1	1	2.0	2.0
WNW							1	1	16.6	2.3
NW							0	0	0.0	16.6
NNW							0	0	0.0	11.8
CALM							0	0	0.0	
CCL. TOTALS			66.4	16.6	16.6		6			8.6

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VCL,BUBBLER & CONTIN MET

MORNING

JULY 1977

THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	3001 TO 3500	THAN > 3500
101-100	3.5	3.5	3.5	3.5	3.5						
101-250	14.2	3.5	3.5	10.7	3.5						
251-500	14.2		7.1								
501-750											
TOTAL	31.9	7.0	7.0	14.1	14.2	3.5	10.6	10.6			
NO INVERSION											
INVERSION TYPE											
1				3.5	3.5	3.5	7.1	3.5			
2				3.5	10.7	10.7	3.5	7.1			
3											
4											
5											
TOTAL											
TOTAL NO. OF OCCURENCES											
0.0											
28											

21.1

46.1

10.7

21.2

75.8

16.7

4.6

0.0

63

32.7

32.8

20.2

12.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCGBEY BS#1 HVL,BUBELER & CCNTIN MET

SURFACE WINDS MCRNING AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 08.9	09.0 TO 11.9	12.0 TO 14.9	15.0 TO 17.9	18.0 TO 20.9	21.0 TO 23.9	24.0 TO 25.0	***** METERS/SECOND TO GREATER THAN	***** RDW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N											3	21.4	.5
NNE											0	0.0	
ENE											0	0.0	
E	7.1										1	7.1	.4
ESE											0	0.0	
SE											0	0.0	
SSE	14.2										2	14.2	1.1
SSW	14.2										2	14.2	.9
WSW											0	0.0	
WS	7.1										0	0.0	
WNW	7.1										1	7.1	2.7
NNW	7.1										1	7.1	.5
CALM											1	7.1	1.4
COL. TOTALS	85.3										2	14.0	.8

SURFACE WINDS AFTERNOON AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 08.9	09.0 TO 11.9	12.0 TO 14.9	15.0 TO 17.9	18.0 TO 20.9	21.0 TO 23.9	24.0 TO 25.0	***** METERS/SECOND TO GREATER THAN	***** RDW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N											1	7.6	1.8
NNE											0	0.0	
ENE											0	0.0	
E											0	0.0	
ESE											0	0.0	
SE											0	0.0	
SSE	15.3	7.6									2	15.3	2.6
SSW	23.0										4	30.6	2.0
WSW											0	0.0	
WS											0	0.0	
WNW											0	0.0	
NNW	7.6										2	15.2	6.3
CALM	7.6										2	15.2	2.0
COL. TOTALS	61.1	30.4	7.6								0	0.0	2.7

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCGBEY BS#1 HVL,BUBELER & CCNTIN MET

JULY 1977

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	7	0
101- 250	1	0
251- 500	4	1
501- 750	0	1
751-1000	0	1
1001-1500	0	1
>1500	0	9
TOTAL	12	13
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	6.1	7.0

AVERAGE LAPSE RATE  
BELOW FIRST INVER.  
(DEG C /100M) -00.47

-02.03



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VQL,BUBELER & CCNTIN MET

100 METER LEVEL WINDS MORNING AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		14.2	7.1				2	14.2	3.9
NNE		7.1					1	7.1	3.9
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			7.1				1	7.1	9.9
SSW		14.2	7.1				10	21.3	4.2
WSW	14.2						22	14.2	4.9
W							2	14.2	1.6
WNW			7.1				1	7.1	8.4
NNW	7.1						1	7.1	5.9
CALM							2	14.2	3.5
COL. TOTALS	21.3	56.8	21.3				0	0.0	4.6

100 METER LEVEL WINDS AFTERNOON AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	7.6	2.4
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW	23.0	7.6		7.6			3	38.2	1.4
WSW	7.6						1	7.6	1.9
W							0	0.0	
WNW			7.6				1	7.6	8.5
NNW	7.6	7.6	15.3				1	22.9	7.3
CALM							3	22.9	6.9
COL. TOTALS	45.8	15.2	30.5	7.6			0	0.0	4.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VQL,BUBELER & CCNTIN MET

200 METER LEVEL WINDS MORNING AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N		7.1	7.1				2	14.2	6.4
NNE			14.2				1	14.2	15.4
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE			7.1				1	7.1	9.9
SSW		7.1	7.1				2	14.2	5.7
WSW	7.1						1	7.1	3.5
W							1	7.1	6.3
WNW			7.1				1	7.1	8.2
NNW			7.1				1	7.1	11.2
CALM							0	0.0	
COL. TOTALS	7.1	21.3	49.7	14.2			0	0.0	9.0

200 METER LEVEL WINDS AFTERNOON AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	7.6	3.9
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW							1	7.6	5
WSW	7.6			7.6			1	15.2	6.4
W							1	7.6	4.2
WNW			7.6				1	7.6	8.5
NNW			7.6				1	7.6	5.3
CALM							3	22.8	8.2
COL. TOTALS	38.1	30.4	15.2	15.2			0	0.0	5.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 FIVOL,BUBBLER & CCNTIN MET

500 METER LEVEL WINDS MORNING AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N		7.1	7.1	7.1			3	21.3
NNE							1	7.1
ENE							0	0.0
E	7.1						1	7.1
ESE							0	0.0
SE							0	0.0
SSE							0	0.0
S							1	7.1
SSW	7.1	7.1			7.1		1	7.1
WSW		7.1					1	7.1
W	7.1						1	7.1
WNW							1	14.2
NNW			7.1			7.1	1	7.1
NN							1	7.1
CALM							0	0.0
COL. TOTALS	28.4	28.4	21.3	14.2	7.1		14	34.9

500 METER LEVEL WINDS AFTERNOON AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N							0	0.0
NNE							0	0.0
ENE							0	0.0
E							0	0.0
ESE	7.6						1	7.6
SE	7.6						1	7.6
SSE							1	7.6
S							0	0.0
SSW							1	7.6
WSW							1	7.6
W							2	15.2
WNW							2	15.2
NNW							4	30.5
NN							0	0.0
CALM							0	0.0
COL. TOTALS	45.6	22.8	15.3	7.6	7.6		13	6.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 FIVOL,BUBBLER & CCNTIN MET

300 METER LEVEL WINDS MORNING AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N			7.1	7.1			2	14.2
NNE			7.1				1	7.1
ENE							0	0.0
E							0	0.0
ESE							0	0.0
SE							0	0.0
SSE							1	7.1
S							0	0.0
SSW							2	14.2
WSW							1	7.1
W							2	14.2
WNW							0	0.0
NNW							2	14.2
NN							0	0.0
CALM							0	0.0
COL. TOTALS	7.1	42.6	35.5	7.1	7.1		14	14.6

300 METER LEVEL WINDS AFTERNOON AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY AVERAGE SPEED
N							1	7.6
NNE							0	0.0
ENE							0	0.0
E							0	0.0
ESE							0	0.0
SE							1	7.6
SSE							3	22.9
S							1	7.6
SSW							1	7.6
WSW							1	7.6
W							1	7.6
WNW							1	7.6
NNW							4	30.6
NN							0	0.0
CALM							0	0.0
COL. TOTALS	38.1	22.8	23.0	7.6	7.6		13	6.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCORBY BS#1 H1VOL,BUBBLER & CCNTIN MET

750 METER LEVEL WINDS MORNING AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							2	16.6	6.7
NNE							0	0.0	
NNE							0	0.0	
ENE		8.3					1	8.3	3.8
E							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							1	8.3	19.3
SSW							1	8.3	3.2
WSW							1	8.3	19.3
WSW							1	8.3	11.1
WSW							2	16.6	14.5
WNW							2	16.6	19.2
WNW							2	16.6	4.7
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	8.3	16.6	41.5	16.6	16.6		12		8.7

750 METER LEVEL WINDS AFTERNOON AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	8.3	6.4
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							1	8.3	1.9
ESE							0	0.0	
ESE							1	8.3	1.4
SSE							1	8.3	25.7
SSE							1	8.3	4.0
SSW							1	8.3	7.4
SSW							1	8.3	14.8
WSW							3	24.9	4.3
WSW							0	0.0	
WNW							1	8.3	9.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	24.9	33.2	16.6			12		8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCORBY BS#1 H1VOL,BUBBLER & CCNTIN MET

1000 METER LEVEL WINDS MORNING AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							1	0.0	2.8
E							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							1	0.0	20.3
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							3	27.0	9.4
WSW							1	9.0	10.2
WNW							3	27.0	8.4
WNW							2	18.0	6.0
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	9.0	27.0	18.0	36.1	9.0		11		8.9

1000 METER LEVEL WINDS AFTERNOON AUGUST,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.5	16.0 TO 25.0	GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							3	27.0	4.5
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
ESE							1	9.0	1.8
SSE							1	9.0	25.7
SSE							1	9.0	2.8
SSW							1	9.0	17.7
SSW							2	18.0	15.3
WSW							1	9.0	12.4
WSW							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	36.0	18.0	18.0	9.0	18.0		11		8.9



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY BS#1 H1VOL, BUBELER & CCCTIN NET

2000 METER LEVEL WINDS MORNING

[illegible]

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE ES#1 H1VOL, BUBELER & CCNTIN MET

1500 METER LEVEL WINDS MORNING AUGUST, 1977

[illegible]

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY BS#1 H1VOL, BUBELER & CCNTIN NET

2000 METER LEVEL WINDS MORNING

DIRECTION	00.1	02.9	10.0	05.9	09.9	06.0	WIND SPEEDS	PETERS/SEC	SECONDS	WIND DIRECTION	TOTAL COUNT	RCUM	PERCENT	TOTAL	AVERAGE SPEED
N						06.0	10.0	25.0	19.0		0	0	0.0	0	0.0
NNE											0	0	0.0	0	
ENE											0	0	0.0	0	
E											0	0	0.0	0	
SE											0	0	0.0	0	
SSE											0	0	0.0	0	
S								9.0			0	0	0.0	0	24.3
SSW											1	100	0.0	1	14.3
WSW											2	22	0.0	2	19.0
W								9.0			6	60	0.0	6	11.0
WNW											0	0	0.0	0	
NW											0	0	0.0	0	
NNW											0	0	0.0	0	
CALM											0	0	0.0	0	

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY BS#1 H1VOL, BUBELER & CCNTIN NET

2000 METER LEVEL WINDS MORNING AUGUST, 1977

DIRECTION	00.1	02.9	10.0	05.9	09.9	06.0	WIND SPEEDS	PETERS/SEC	SECONDS	WIND DIRECTION	TOTAL COUNT	RCUM	PERCENT	TOTAL	AVERAGE SPEED
N						06.0	10.0	25.0	19.0		0	0	0.0	0	0.0
NNE											0	0	0.0	0	0.0
NNE											0	0	0.0	0	0.0
E											0	0	0.0	0	0.0
SE											0	0	0.0	0	0.0
SE											0	0	0.0	0	0.0
S								9.0			0	0	0.0	0	0.0
S											0	0	0.0	0	0.0
SSW											0	0	0.0	0	0.0
SSW											0	0	0.0	0	0.0
WS								9.0			1	100	100.0	1	14.3
NNW					9.0	9.0	9.0				2	200	200.0	2	9.0
NNW							4.5				6	600	600.0	6	11.0
NNW											0	0	0.0	0	0.0
CALM											0	0	0.0	0	0.0



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

SURFACE WINDS MORNING SEPTEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 TO TO TO TC TC THAN  
 02.9 05.9 09.9 15.9 25.0 25.0

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TC	16.0 TC	GREATER THAN	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0.0
ENE	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0.0
ESE	0	0	0	0	0	0	0	0	0.0
SE	0	0	0	0	0	0	0	0	0.0
SSE	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0.0
SSW	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0.0
WSW	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0.0
WNW	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0.0
NNW	0	0	0	0	0	0	0	0	0.0
CALM	0	0	0	0	0	0	0	0	0.0
COL. TOTALS	45.2	9.0	27.2	9.0	3.2	1.6	11	45.0	1.0

SURFACE WINDS AFTERNOON SEPTEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 TO TO TO TC TC THAN  
 02.9 05.9 09.9 15.9 25.0 25.0

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TC	16.0 TC	GREATER THAN	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0.0
ENE	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0.0
ESE	0	0	0	0	0	0	0	0	0.0
SE	0	0	0	0	0	0	0	0	0.0
SSE	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0.0
SSW	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0.0
WSW	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0.0
WNW	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0.0
NNW	0	0	0	0	0	0	0	0	0.0
CALM	0	0	0	0	0	0	0	0	0.0
COL. TOTALS	49.8	33.2	27.2	9.0	3.2	1.6	12	16.0	2.1

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR AUGUST 1977

MIXING HEIGHT (METERS) MORNING OCCURENCES AFTERNOON OCCURENCES

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	5	0
101- 250	6	0
251- 500	1	0
501- 750	1	0
751-1000	0	1
1001-1500	0	3
>1500	0	9
TOTAL	13	13

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC) 8.1 7.9

AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M) -00.83 -01.86



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCCBEY ES#1 HIVOL,BUBELER & CCNTIN MET

100 METER LEVEL WINDS MORNING SEPTEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N							0		
NNE	9.0						1		1.8
NNE							1		5.0
ENE							1		0.0
ENE			9.0				1		0.0
ESE							1		0.0
ESE							1		7.5
SSE		9.0					1		4.1
SSE	9.0						1		2.9
SSW	9.0						1		2.4
SSW							1		2.1
WSW							0		0.0
WSW							0		0.0
WSW			9.0				1		3.1
NNW			9.0				1		5.6
NNW			9.0				2		6.3
NNW	9.0						2		18.0
CALM							0		0.0
COL. TOTALS	45.0	27.0	27.0				11		4.1

COL. TOTALS 45.0 27.0 27.0

100 METER LEVEL WINDS AFTERNOON SEPTEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N							3		2.7
NNE	16.6	8.3					0		0.0
NNE							0		0.0
ENE							0		0.0
ENE							0		0.0
ESE			8.3	8.3			2		7.7
ESE			8.3				1		4.0
SSE			8.3				1		9.2
SSE							1		2.6
SSW	8.3						0		0.0
SSW							1		6.9
WSW	8.3		16.6				2		1.0
WSW							1		0.0
NNW	8.3						0		0.0
NNW							0		0.0
NNW							0		0.0
CALM							0		0.0
COL. TOTALS	41.5	24.9	24.5	8.3			12		4.5

COL. TOTALS 41.5 24.9 24.5 8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCCBEY ES#1 HIVOL,BUBELER & CCNTIN MET

200 METER LEVEL WINDS MORNING SEPTEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N							0		
NNE		9.0					1		5.0
NNE							1		2.7
ENE							1		0.0
ENE			9.0				1		0.0
ESE							0		0.0
ESE							0		0.0
SSE							0		0.0
SSE			9.0				2		5.5
SSW	9.0		9.0				2		4.5
SSW							0		0.0
WSW							0		0.0
WSW							0		0.0
NNW			9.0				1		3.1
NNW			9.0				1		5.3
NNW			18.1				2		5.8
CALM							0		0.0
COL. TOTALS	18.0	36.0	45.1				11		5.6

COL. TOTALS 18.0 36.0 45.1

200 METER LEVEL WINDS AFTERNOON SEPTEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N							3		2.2
NNE							0		0.0
NNE							0		0.0
ENE							0		0.0
ENE							0		0.0
ESE			8.3	8.3			2		10.0
ESE			8.3				1		4.8
SSE			8.3				1		9.2
SSE							1		1.1
SSW	8.3						0		0.0
SSW							1		8.6
WSW	8.3		16.6				2		1.1
WSW							0		0.0
NNW	8.3						0		0.0
NNW							0		0.0
NNW							0		0.0
CALM							0		0.0
COL. TOTALS	41.5	8.3	41.5	8.3			12		5.0

COL. TOTALS 41.5 8.3 41.5 8.3

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVCL, BUBBLER & CCNTIN MET

300 METER LEVEL WINDS MORNING SEPTEMBER, 1977

[illegible]

25.0	4.3
12.5	6.7
12.5	6.8
12.5	6.9
12.5	6.1
0	0.0

COL. TOTALS	12.5	25.0	50.0	12.5
1	12.5	25.0	50.0	12.5
2	12.5	25.0	50.0	12.5
3	12.5	25.0	50.0	12.5
4	12.5	25.0	50.0	12.5
5	12.5	25.0	50.0	12.5
6	12.5	25.0	50.0	12.5
7	12.5	25.0	50.0	12.5
8	12.5	25.0	50.0	12.5
9	12.5	25.0	50.0	12.5
10	12.5	25.0	50.0	12.5
11	12.5	25.0	50.0	12.5
12	12.5	25.0	50.0	12.5
13	12.5	25.0	50.0	12.5
14	12.5	25.0	50.0	12.5
15	12.5	25.0	50.0	12.5
16	12.5	25.0	50.0	12.5
17	12.5	25.0	50.0	12.5
18	12.5	25.0	50.0	12.5
19	12.5	25.0	50.0	12.5
20	12.5	25.0	50.0	12.5
21	12.5	25.0	50.0	12.5
22	12.5	25.0	50.0	12.5
23	12.5	25.0	50.0	12.5
24	12.5	25.0	50.0	12.5
25	12.5	25.0	50.0	12.5
26	12.5	25.0	50.0	12.5
27	12.5	25.0	50.0	12.5
28	12.5	25.0	50.0	12.5
29	12.5	25.0	50.0	12.5
30	12.5	25.0	50.0	12.5
31	12.5	25.0	50.0	12.5
32	12.5	25.0	50.0	12.5
33	12.5	25.0	50.0	12.5
34	12.5	25.0	50.0	12.5
35	12.5	25.0	50.0	12.5
36	12.5	25.0	50.0	12.5
37	12.5	25.0	50.0	12.5
38	12.5	25.0	50.0	12.5
39	12.5	25.0	50.0	12.5
40	12.5	25.0	50.0	12.5
41	12.5	25.0	50.0	12.5
42	12.5	25.0	50.0	12.5
43	12.5	25.0	50.0	12.5
44	12.5	25.0	50.0	12.5
45	12.5	25.0	50.0	12.5
46	12.5	25.0	50.0	12.5
47	12.5	25.0	50.0	12.5
48	12.5	25.0	50.0	12.5
49	12.5	25.0	50.0	12.5
50	12.5	25.0	50.0	12.5
51	12.5	25.0	50.0	12.5
52	12.5	25.0	50.0	12.5
53	12.5	25.0	50.0	12.5
54	12.5	25.0	50.0	12.5
55	12.5	25.0	50.0	12.5
56	12.5	25.0	50.0	12.5
57	12.5	25.0	50.0	12.5
58	12.5	25.0	50.0	12.5
59	12.5	25.0	50.0	12.5
60	12.5	25.0	50.0	12.5
61	12.5	25.0	50.0	12.5
62	12.5	25.0	50.0	12.5
63	12.5	25.0	50.0	12.5
64	12.5	25.0	50.0	12.5
65	12.5	25.0	50.0	12.5
66	12.5	25.0	50.0	12.5
67	12.5	25.0	50.0	12.5
68	12.5	25.0	50.0	12.5
69	12.5	25.0	50.0	12.5
70	12.5	25.0	50.0	12.5
71	12.5	25.0	50.0	12.5
72	12.5	25.0	50.0	12.5
73	12.5	25.0	50.0	12.5
74	12.5			

3000 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1977

DIRECTION		WIND SPEEDS		METERS/SECOND		GREATER		TOTAL		SUMMARY	
QU.1	QU.2	TO	TO	TO	TO	TO	TO	COUNT	PERCENT	AVERAGE	SPEED
00.1	03.0	06.0	10.0	16.0	25.0	25.0	25.0				
02.9	05.9	09.9	15.9	25.0	25.0	25.0	25.0				

N	8.3	8.3				200	16.6	2.0
N						9	0.0	
E	8.3					11	9.3	6.2
S	8.3		8.3			11	9.3	1.2
S						2	16.6	7.8
S	8.3		16.6			2	16.6	1.5
S						1	0.0	
M						2	0.0	
M		8.3				2	0.0	8.6
M						1	0.0	
M	8.3					1	0.0	1.1
M						0	0.0	
TOTALS	41.5	16.6	24.9	16.6		0	0.0	5.5
CALM						12		

CCL. TOTALS 41.5 16.6 24.9 16.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL, BUBELER & CCNTIN MET

750 METER LEVEL WINDS MORNNG SEPTEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N	14.2						0.0	0		
NE							14.2	1		2.9
E							0.0	0		
ENE							0.0	0		
ESE							0.0	0		
EE							0.0	0		
ESE							0.0	0		
SSE							0.0	0		
SS							0.0	0		
SSW							0.0	0		
WSW							0.0	0		
WS							0.0	0		
WNW							0.0	0		
NNW							0.0	0		
CALM							0.0	0		
COL. TOTALS	14.2	42.6	14.2	28.4				7		6.6

750 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N							0.0	0		
NE							0.0	0		
E							0.0	0		
ENE							0.0	0		
ESE							0.0	0		
EE							0.0	0		
ESE							0.0	0		
SSE							0.0	0		
SS							0.0	0		
SSW							0.0	0		
WSW							0.0	0		
WS							0.0	0		
WNW							0.0	0		
NNW							0.0	0		
CALM							0.0	0		
COL. TOTALS	18.1	27.0	27.1	18.0	9.0			11		6.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL, BUBELER & CCNTIN MET

1000 METER LEVEL WINDS MORNNG SEPTEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N							0.0	0		
NE							0.0	0		
E							0.0	0		
ENE							0.0	0		
ESE							0.0	0		
EE							0.0	0		
ESE							0.0	0		
SSE							0.0	0		
SS							0.0	0		
SSW							0.0	0		
WSW							0.0	0		
WS							0.0	0		
WNW							0.0	0		
NNW							0.0	0		
CALM							0.0	0		
COL. TOTALS	56.8	14.2	28.4					7		6.8

1000 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N							0.0	0		
NE							0.0	0		
E							0.0	0		
ENE							0.0	0		
ESE							0.0	0		
EE							0.0	0		
ESE							0.0	0		
SSE							0.0	0		
SS							0.0	0		
SSW							0.0	0		
WSW							0.0	0		
WS							0.0	0		
WNW							0.0	0		
NNW							0.0	0		
CALM							0.0	0		
COL. TOTALS	50.0	10.0	40.0	10.0	10.0			10		7.3



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 FIVOL,BUBBLER & CCNTIN MET

2000 METER LEVEL WINDS MORNING SEPTEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	PERCENT	AVERAGE	SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
COL. TOTALS	14.2	42.6	28.5	14.2			7		10.0	

2000 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	PERCENT	AVERAGE	SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
COL. TOTALS	37.5	25.0	25.0	12.5			8		10.5	

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 FIVOL,BUBBLER & CCNTIN MET

1500 METER LEVEL WINDS MORNING SEPTEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	PERCENT	AVERAGE	SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
COL. TOTALS	14.2	14.2	42.6	14.2	14.2		7		6.7	

1500 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	PERCENT	AVERAGE	SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
COL. TOTALS	12.5	25.0	50.0	12.5	12.5		8		7.5	



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CU - SCUBBY ES#1 H1VGL,BUBELER & CCNTIN MET

SURFACE WINDS MORNING CCTOBER, 1977

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	RCM	ICL	CCNT	TOTAL	PERCENT	AVERAGE
N	7.6						1	7.6		7.6		4
NE	7.6						0	0.0		0.0		5
E							0	0.0		0.0		
ENE							0	0.0		0.0		
ESE	7.6						0	0.0		0.0		1.4
SSE	7.6						1	7.6		7.6		2.3
S	7.6						1	7.6		7.6		1.4
SSW							1	7.6		7.6		1.4
SW							0	0.0		0.0		3.6
WSW							0	0.0		0.0		
W	7.6						1	7.6		7.6		1.4
WNW	7.6						1	7.6		7.6		4
NW							2	15.2		15.2		5.4
NNW	7.6						1	7.6		7.6		5.9
CALM							1	7.0		7.0		

COL. TOTALS 68.4 15.2 7.6 13 1.9

SURFACE WINDS AFTERNOON CCTOBER, 1977

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	RCM	ICL	CCNT	TOTAL	PERCENT	AVERAGE
N	7.6						1	7.6		7.6		2.7
NE							0	0.0		0.0		
E							0	0.0		0.0		
ENE							0	0.0		0.0		
ESE	7.6						1	7.6		7.6		1.4
SSE							0	0.0		0.0		3.6
S							1	7.6		7.6		4.1
SSW							1	7.6		7.6		4.7
SW							0	0.0		0.0		14.5
WSW							1	7.6		7.6		17.3
W							1	7.6		7.6		5.4
WNW							2	15.2		15.2		5.9
NW							0	0.0		0.0		4.0
NNW							0	0.0		0.0		
CALM							0	0.0		0.0		

COL. TOTALS 15.2 61.0 15.2 7.6 5.2

# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CU - SCUBBY ES#1 H1VGL,BUBELER & CCNTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR SEPTEMBER 1977

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0-100	7	0
101-250	1	0
251-500	1	0
501-750	1	0
751-1000	0	3
1001-1500	1	1
>1500	0	8
TOTAL	11	12

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC) 4.4 7.1

AVERAGE LAPSE RATE BELCH FIRST INVER. (DEG C / 100M) -00.65 -01.47



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CC - SCOBLEY ES#1 H1VOL,BUBBLER & CCNTIN MET

100 METER LEVEL WINDS MORNNG CCTOBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECND GREATER THAN	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ESE	7.6	7.6					1	7.6	2.5
ESE							1	7.6	5.4
SSE							0	0.0	
SSE							0	0.0	
SSW	7.6	7.6					1	7.6	3.0
SSW							1	7.6	1.5
WSW							0	0.0	
WSW			7.6				1	7.6	6.7
WNW	7.6	7.6					1	7.6	3.5
WNW			15.3	7.6			2	15.3	8.2
NNW			15.3				2	15.3	9.5
NNW							2	15.3	8.5
CALM							0	0.0	
CL. TOTALS	22.8	30.4	38.2	7.6			13		6.0

100 METER LEVEL WINDS AFTERNOON CCTOBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECND GREATER THAN	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							1	7.6	14.7
NNE							1	7.6	5.8
ENE							0	0.0	
ESE							1	7.6	3.3
ESE							1	7.6	3.3
SSE							1	7.6	4.2
SSE							1	7.6	7.1
SSW			15.3				2	15.3	10.7
SSW			7.6	7.6			2	15.3	10.7
WSW			7.6	7.6			2	15.3	10.2
WNW			7.6	7.6			2	15.3	8.0
NNW							0	0.0	
CALM							0	0.0	
CL. TOTALS	38.0	30.5	30.4				13		7.5

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CC - SCOBLEY ES#1 H1VOL,BUBBLER & CCNTIN MET

200 METER LEVEL WINDS MORNNG CCTOBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECND GREATER THAN	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ESE			15.3				2	15.3	8.4
ESE							0	0.0	
SSE							0	0.0	
SSE			7.6	7.6			2	15.2	7.1
SSW							0	0.0	
SSW							0	0.0	
WSW			7.6	7.6			3	22.8	8.1
WNW							0	0.0	
WNW			7.6	23.0			4	30.6	10.9
NNW			15.3				2	15.3	9.1
NNW							0	0.0	
CALM							0	0.0	
CL. TOTALS		15.2	53.4	30.6			13		9.0

200 METER LEVEL WINDS AFTERNOON CCTOBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECND GREATER THAN	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							2	15.2	10.2
NNE							0	0.0	
ENE							0	0.0	
ESE	7.6						1	7.6	2.9
ESE							1	7.6	3.8
SSE							1	7.6	4.4
SSE							1	7.6	7.7
SSW			15.3				2	15.3	10.7
SSW			7.6	7.6			2	15.2	9.5
WSW			7.6	7.6			2	15.2	8.2
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
CL. TOTALS	7.6	30.4	30.5	30.4			13		8.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL,BUBBLER & CCNTIN MET

500 METER LEVEL WINDS MORNNG CCTCBER,1977

DIRECTION	00.1 IC	03.0 IC	05.9 IC	09.9 IC	15.5 IC	25.0 IC	WIND SPEEDS METERS/SECOND	GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N					10.0				1	1	10.4
NNE									0	0	
ENE									0	0	
ESE			10.0						1	1	5.8
SEE									0	0	
SSW									0	0	
WSW				10.0					1	1	7.5
NNW					10.0				1	1	10.7
NNN									0	0	
CALM									0	0	
COL. TOTALS									10	10	11.4

500 METER LEVEL WINDS AFTERNOON CCTCBER,1977

DIRECTION	00.1 IC	03.0 IC	05.9 IC	09.9 IC	15.5 IC	25.0 IC	WIND SPEEDS METERS/SECOND	GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N					9.0				1	1	10.3
NNE									0	0	
ENE									0	0	
ESE									0	0	
SEE									0	0	
SSW									0	0	
WSW									0	0	
NNW									0	0	
NNN									0	0	
CALM									0	0	
COL. TOTALS									11	11	9.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL,BUBBLER & CCNTIN MET

300 METER LEVEL WINDS MORNNG CCTCBER,1977

DIRECTION	00.1 IC	03.0 IC	05.9 IC	09.9 IC	15.5 IC	25.0 IC	WIND SPEEDS METERS/SECOND	GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N				10.0					1	1	9.6
NNE									0	0	
ENE									0	0	
ESE				10.0					1	1	8.0
SEE									0	0	
SSW									0	0	
WSW				10.0					0	0	
NNW					10.0				0	0	
NNN									0	0	
CALM									0	0	
COL. TOTALS									10	10	10.8

300 METER LEVEL WINDS AFTERNOON CCTCBER,1977

DIRECTION	00.1 IC	03.0 IC	05.9 IC	09.9 IC	15.5 IC	25.0 IC	WIND SPEEDS METERS/SECOND	GREATER THAN	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** AVERAGE SPEED
N			9.0						2	2	10.1
NNE									0	0	
ENE									0	0	
ESE									0	0	
SEE									0	0	
SSW									0	0	
WSW				18.1					1	1	4.2
NNW					18.1				1	1	4.3
NNN									0	0	
CALM									0	0	
COL. TOTALS									11	11	8.8

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 HVL, BUBELER & CCNTIN MET

750 METER LEVEL WINDS MCRING CCTOBER, 1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.0 TO	25.0 TO	WIND SPEEDS METERS/SECOND GREATER THAN	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N								1	11.1	10.1
NNE								1	0.0	
ENE								0	0.0	
E	11.1							1	11.1	4.1
ESE								0	0.0	
SE								0	0.0	
SSE								1	11.1	12.7
S								1	0.0	7.9
SSW								0	0.0	
WSW								0	0.0	
W								2	22.2	16.6
WNW								1	11.1	8.5
NW								2	22.2	16.4
NNW								0	0.0	
CALM								0	0.0	
COL. TOTALS	11.1	22.2	33.3	33.3				9		12.1

750 METER LEVEL WINDS AFTERNOON CCTOBER, 1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.0 TO	25.0 TO	WIND SPEEDS METERS/SECOND GREATER THAN	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N								1	10.0	1.6
NNE								0	0.0	
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SE								0	0.0	
SSE								1	10.0	9.2
S								0	0.0	
SSW								1	10.0	10.5
WSW								1	10.0	9.2
W								2	20.0	20.8
WNW								1	10.0	12.7
NW								2	20.0	17.3
NNW								1	10.0	11.9
CALM								0	0.0	
COL. TOTALS	10.0	10.0	40.0	30.0				10		11.1

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 HVL, BUBELER & CCNTIN MET

1000 METER LEVEL WINDS MCRING CCTOBER, 1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.0 TO	25.0 TO	WIND SPEEDS METERS/SECOND GREATER THAN	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE								1	12.5	3.0
E								0	0.0	
ESE								0	0.0	
SE								0	0.0	
SSE								0	0.0	
S								1	12.5	17.9
SSW								1	12.5	6.1
WSW								0	0.0	
W								2	25.0	16.7
WNW								1	12.5	14.0
NW								1	12.5	16.9
NNW								1	12.5	10.8
CALM								0	0.0	
COL. TOTALS	12.5	37.5	25.0	25.0				8		11.5

1000 METER LEVEL WINDS AFTERNOON CCTOBER, 1977

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.0 TO	25.0 TO	WIND SPEEDS METERS/SECOND GREATER THAN	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SE								0	0.0	
SSE								1	10.0	7.9
S								0	0.0	
SSW								1	10.0	15.1
WSW								1	10.0	12.8
W								3	30.0	13.5
WNW								1	10.0	11.0
NW								1	10.0	3.2
NNW								0	0.0	
CALM								0	0.0	
COL. TOTALS	20.0	30.0	40.0	10.0				10		10.1



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL, BUBBLER & CCNTIN MET

500 METER LEVEL WINDS MORNING CCTCBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							1	10.0	10.4	
NNE							0	0.0		
ENE							0	0.0		
E		10.0					1	10.0	5.8	
ESE							0	0.0		
SE							0	0.0		
SSE							0	0.0		
S		10.0					1	10.0	7.5	
SSW							0	0.0	10.7	
WSW							0	0.0		
W							0	0.0		
WNW							0	0.0	15.4	
NNW							2	20.0	7.1	
N							1	10.0	12.4	
NN							1	10.0	17.7	
CALM							0	0.0		

COL. TOTALS

500 METER LEVEL WINDS AFTERNOON CCTCBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							1	10.0	10.3	
NNE							0	0.0		
ENE							0	0.0	1.2	
E							0	0.0		
ESE							0	0.0		
SE							0	0.0	6.4	
SSE							0	0.0		
S							0	0.0		
SSW							0	0.0	11.0	
WSW							2	20.0	18.1	
W							1	10.0	13.2	
WNW							1	10.0	17.8	
NNW							1	10.0	6.7	
N							0	0.0	18.1	
CALM							0	0.0		

COL. TOTALS

500 METER LEVEL WINDS AFTERNOON CCTCBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							1	10.0	10.3	
NNE							0	0.0		
ENE							0	0.0	1.2	
E							0	0.0		
ESE							0	0.0		
SE							0	0.0	6.4	
SSE							0	0.0		
S							0	0.0		
SSW							0	0.0	11.0	
WSW							2	20.0	18.1	
W							1	10.0	13.2	
WNW							1	10.0	17.8	
NNW							1	10.0	6.7	
N							0	0.0	18.1	
CALM							0	0.0		

COL. TOTALS

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL, BUBBLER & CCNTIN MET

300 METER LEVEL WINDS MORNING CCTCBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							1	10.0	5.6	
NNE							0	0.0		
ENE							0	0.0		
E							0	0.0		
ESE							1	10.0	8.0	
SE							0	0.0		
SSE							0	0.0		
S							0	0.0		
SSW							0	0.0		
WSW							0	0.0		
W							0	0.0		
WNW							0	0.0		
NNW							1	10.0	14.1	
N							1	10.0	16.2	
NN							1	10.0	17.0	
CALM							0	0.0	5.7	

COL. TOTALS

300 METER LEVEL WINDS AFTERNOON CCTCBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							2	18.0	10.1	
NNE							0	0.0		
ENE							0	0.0		
E							0	0.0		
ESE							0	0.0		
SE							0	0.0	4.2	
SSE							0	0.0		
S							0	0.0		
SSW							0	0.0	4.3	
WSW							1	18.0	8.2	
W							2	18.0	14.1	
WNW							1	18.0	12.2	
NNW							1	18.0	8.7	
N							0	0.0	11.6	
CALM							0	0.0		

COL. TOTALS

300 METER LEVEL WINDS AFTERNOON CCTCBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** RCM TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							2	18.0	10.1	
NNE							0	0.0		
ENE							0	0.0		
E							0	0.0		
ESE							0	0.0		
SE							0	0.0	4.2	
SSE							0	0.0		
S							0	0.0		
SSW							0	0.0	4.3	
WSW							1	18.0	8.2	
W							2	18.0	14.1	
WNW							1	18.0	12.2	
NNW							1	18.0	8.7	
N							0	0.0	11.6	
CALM							0	0.0		

COL. TOTALS

CCCL. TOTALS	10.0	10.0	40.0	30.0	10.0	10.0	11.1
--------------	------	------	------	------	------	------	------

CGI- TOTALS	20.0	30.0	40.0	10.0	10.1
-------------	------	------	------	------	------







FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CU - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	PETERS/SECOND GREAT THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							2	18.1	1.5
NNE	18.1						2	0.0	
ENE							2	0.0	
E							2	0.0	
ESE		9.0					2	18.0	2.9
SE							2	0.0	
SSE	18.1						2	0.0	
S	18.1						2	18.1	2.6
SSW							2	0.0	
WSW							2	0.0	
W							2	0.0	
WNW				9.0			2	0.0	
NW	9.0			9.0			2	0.0	
CALM							0	0.0	
COL. TOTALS	72.3	9.0		18.0		11			3.9

SURFACE WINDS AFTERNOON NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	PETERS/SECOND GREAT THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE			7.6				1	15.3	7.7
SE							2	15.3	4.5
SSE	7.6						2	7.6	
S							1	7.6	
SSW							1	7.6	
WSW							1	15.2	6.4
W							1	15.2	8.1
WNW							1	15.2	12.3
NW							2	15.2	6.5
CALM							1	17.6	1.8
COL. TOTALS	15.2	38.1	30.4	15.2		13		0.0	6.1

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CU - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR OCTOBER 1977

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0-100	7	0
101-250	3	0
251-500	0	1
501-750	0	2
751-1000	2	1
1001-1500	0	1
>1500	1	7
TOTAL	13	12

AVERAGE WIND SPEED  
THROUGH MIXED  
LAYER (M/SEC) 5.2

8.9

AVERAGE LAPSE RATE  
BELOW FIRST INVER.  
(DEG C/100M) -00.81

-01.29

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

100 METER LEVEL WINDS MORNING NOVEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	6.6
NNE							0	0.0	
NNE							0	0.0	
EENE							0	0.0	
EENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSES			9.0	9.0			2	18.0	8.5
SSES							0	0.0	
SSW							0	0.0	
SSW			9.0	18.1			1	9.0	3.3
WSW			9.0				1	9.0	7.9
WSW							2	18.1	4.0
NNW							1	9.0	12.1
NNW			9.0	18.1	9.0		3	27.1	4.6
NNW							1	9.0	
CALM							0	0.0	
COL. TOTALS			27.0	54.2	9.0	9.0	11		7.9

100 METER LEVEL WINDS AFTERNOON NOVEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N			7.6				1	7.6	3.6
NNE							0	0.0	
NNE							0	0.0	
EENE							0	0.0	
EENE							0	0.0	
ESE			7.6				1	7.6	5.9
ESE							0	0.0	
SSES							1	7.6	4.9
SSES							0	0.0	
SSW			7.6				1	7.6	4.7
SSW			7.6				2	15.2	6.5
WSW			7.6				1	7.6	5.8
WSW							1	7.6	12.1
NNW			7.6	7.6			1	15.2	12.0
NNW							4	30.6	7.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			45.6	38.2	15.2		13		7.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CG - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

200 METER LEVEL WINDS MORNING NOVEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	7.7
NNE							0	0.0	
NNE							0	0.0	
EENE							0	0.0	
EENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSES				18.1			2	18.1	11.5
SSES							0	0.0	
SSW							0	0.0	
SSW				9.0			1	9.0	13.6
WSW			9.0	9.0			2	18.0	9.8
WSW							2	18.0	17.0
NNW			9.0	18.1	9.0		3	36.1	13.5
NNW							1	9.0	4.4
CALM							0	0.0	
COL. TOTALS			18.0	18.0	54.2	9.0	11		11.7

200 METER LEVEL WINDS AFTERNOON NOVEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TCTAL CCUNT	SUMMARY TCTAL PERCENT	AVERAGE SPEED
N			7.6				1	7.6	4.2
NNE							0	0.0	
NNE							0	0.0	
EENE							0	0.0	
EENE							0	0.0	
ESE			7.6				1	7.6	5.2
ESE							0	0.0	
SSES							1	7.6	17.8
SSES							2	15.2	8.7
SSW			7.6				1	7.6	12.3
SSW			7.6				2	15.2	15.3
WSW			7.6				1	7.6	19.9
WSW							3	22.8	13.0
NNW			7.6	7.6			1	15.2	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			30.4	15.2	53.2		13		9.3



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL-BUBBLER & CCNTIN MET

500 METER LEVEL WINDS MCRNING NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER IFAN 25.0	***** WIND SPEEDS METERS/SECCND *****	***** SUMMARY *****
N								C.C
NNE								C.C
ENE								C.C
E								C.C
ESE								C.C
SE								C.C
SSE								C.C
S								C.C
SSW								C.C
WSW								C.C
W								C.C
WNW								C.C
NNW								C.C
CALM								C.C
COL. TOTALS								

500 METER LEVEL WINDS AFTERNOON NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER IFAN 25.0	***** WIND SPEEDS METERS/SECCND *****	***** SUMMARY *****
N								C.C
NNE								C.C
ENE								C.C
E								C.C
ESE								C.C
SE								C.C
SSE								C.C
S								C.C
SSW								C.C
WSW								C.C
W								C.C
WNW								C.C
NNW								C.C
CALM								C.C
COL. TOTALS								

500 METER LEVEL WINDS AFTERNOON NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER IFAN 25.0	***** WIND SPEEDS METERS/SECCND *****	***** SUMMARY *****
N								C.C
NNE								C.C
ENE								C.C
E								C.C
ESE								C.C
SE								C.C
SSE								C.C
S								C.C
SSW								C.C
WSW								C.C
W								C.C
WNW								C.C
NNW								C.C
CALM								C.C
COL. TOTALS								

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL-BUBBLER & CCNTIN MET

300 METER LEVEL WINDS MCRNING NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER IFAN 25.0	***** WIND SPEEDS METERS/SECCND *****	***** SUMMARY *****
N								C.C
NNE								C.C
ENE								C.C
E								C.C
ESE								C.C
SE								C.C
SSE								C.C
S								C.C
SSW								C.C
WSW								C.C
W								C.C
WNW								C.C
NNW								C.C
CALM								C.C
COL. TOTALS								

300 METER LEVEL WINDS AFTERNOON NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER IFAN 25.0	***** WIND SPEEDS METERS/SECCND *****	***** SUMMARY *****
N								C.C
NNE								C.C
ENE								C.C
E								C.C
ESE								C.C
SE								C.C
SSE								C.C
S								C.C
SSW								C.C
WSW								C.C
W								C.C
WNW								C.C
NNW								C.C
CALM								C.C
COL. TOTALS								

300 METER LEVEL WINDS AFTERNOON NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER IFAN 25.0	***** WIND SPEEDS METERS/SECCND *****	***** SUMMARY *****
N								C.C
NNE								C.C
ENE								C.C
E								C.C
ESE								C.C
SE								C.C
SSE								C.C
S								C.C
SSW								C.C
WSW								C.C
W								C.C
WNW								C.C
NNW								C.C
CALM								C.C
COL. TOTALS								

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCGBY ES#1 FIVOL,BUBELER & CONTIN MET

750 METER LEVEL WINDS MCRNING NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
WNW							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
CCL. TOTALS			37.5	37.5	25.0		8		17.3

750 METER LEVEL WINDS AFTERNOON NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	8.3	5.1
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
WNW							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
CCL. TOTALS			16.6	74.8	8.3		12		13.0

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCGBY ES#1 FIVOL,BUBELER & CONTIN MET

1000 METER LEVEL WINDS MCRNING NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
WNW							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
CCL. TOTALS			33.2	45.6	16.6		6		12.1

1000 METER LEVEL WINDS AFTERNOON NOVEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	8.3	4.4
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
WNW							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
CCL. TOTALS			8.3	16.6	49.9	8.3	12		13.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY ES#1 FIVOL,BUBELER & CCNTIN MET

2000 METER LEVEL WINDS MORNING NOVEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS PETERS/SECCND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.5 25.0 THAN  
 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	RCM	TOTAL	PERCENT	AVERAGE	SPEED
N	0	0	0	0	0	0	0	0	0	0.0		
NE	0	0	0	0	0	0	0	0	0	0.0		
E	0	0	0	0	0	0	0	0	0	0.0		
ENE	0	0	0	0	0	0	0	0	0	0.0		
SE	0	0	0	0	0	0	0	0	0	0.0		
SESE	0	0	0	0	0	0	0	0	0	0.0		
SS	0	0	0	0	0	0	0	0	0	0.0		
SSS	0	0	0	0	0	0	0	0	0	0.0		
SSSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
W	0	0	0	0	0	0	0	0	0	0.0		
WNW	0	0	0	0	0	0	0	0	0	0.0		
NNW	0	0	0	0	0	0	0	0	0	0.0		
NN	0	0	0	0	0	0	0	0	0	0.0		
CALM	0	0	0	0	0	0	0	0	0	0.0		
CAL. TOTALS	0	0	0	0	0	0	0	0	0	0.0		

COL. TOTALS 25.0 50.0 25.0 13.3

2000 METER LEVEL WINDS AFTERNOON NOVEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS PETERS/SECCND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.5 25.0 THAN  
 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	RCM	TOTAL	PERCENT	AVERAGE	SPEED
N	0	0	0	0	0	0	0	0	0	0.0		
NE	0	0	0	0	0	0	0	0	0	0.0		
E	0	0	0	0	0	0	0	0	0	0.0		
ENE	0	0	0	0	0	0	0	0	0	0.0		
SE	0	0	0	0	0	0	0	0	0	0.0		
SESE	0	0	0	0	0	0	0	0	0	0.0		
SS	0	0	0	0	0	0	0	0	0	0.0		
SSS	0	0	0	0	0	0	0	0	0	0.0		
SSSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
W	0	0	0	0	0	0	0	0	0	0.0		
WNW	0	0	0	0	0	0	0	0	0	0.0		
NNW	0	0	0	0	0	0	0	0	0	0.0		
NN	0	0	0	0	0	0	0	0	0	0.0		
CALM	0	0	0	0	0	0	0	0	0	0.0		
CAL. TOTALS	0	0	0	0	0	0	0	0	0	0.0		

COL. TOTALS 44.4 55.5 15.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY ES#1 FIVOL,BUBELER & CCNTIN MET

1500 METER LEVEL WINDS MORNING NOVEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS PETERS/SECCND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.5 25.0 THAN  
 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	RCM	TOTAL	PERCENT	AVERAGE	SPEED
N	0	0	0	0	0	0	0	0	0	0.0		
NE	0	0	0	0	0	0	0	0	0	0.0		
E	0	0	0	0	0	0	0	0	0	0.0		
ENE	0	0	0	0	0	0	0	0	0	0.0		
SE	0	0	0	0	0	0	0	0	0	0.0		
SESE	0	0	0	0	0	0	0	0	0	0.0		
SS	0	0	0	0	0	0	0	0	0	0.0		
SSS	0	0	0	0	0	0	0	0	0	0.0		
SSSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
W	0	0	0	0	0	0	0	0	0	0.0		
WNW	0	0	0	0	0	0	0	0	0	0.0		
NNW	0	0	0	0	0	0	0	0	0	0.0		
NN	0	0	0	0	0	0	0	0	0	0.0		
CALM	0	0	0	0	0	0	0	0	0	0.0		
CAL. TOTALS	0	0	0	0	0	0	0	0	0	0.0		

COL. TOTALS 20.0 60.0 20.0 12.4

1500 METER LEVEL WINDS AFTERNOON NOVEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS PETERS/SECCND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.5 25.0 THAN  
 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	GREATER	TOTAL	RCM	TOTAL	PERCENT	AVERAGE	SPEED
N	0	0	0	0	0	0	0	0	0	0.0		
NE	0	0	0	0	0	0	0	0	0	0.0		
E	0	0	0	0	0	0	0	0	0	0.0		
ENE	0	0	0	0	0	0	0	0	0	0.0		
SE	0	0	0	0	0	0	0	0	0	0.0		
SESE	0	0	0	0	0	0	0	0	0	0.0		
SS	0	0	0	0	0	0	0	0	0	0.0		
SSS	0	0	0	0	0	0	0	0	0	0.0		
SSSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
WSW	0	0	0	0	0	0	0	0	0	0.0		
W	0	0	0	0	0	0	0	0	0	0.0		
WNW	0	0	0	0	0	0	0	0	0	0.0		
NNW	0	0	0	0	0	0	0	0	0	0.0		
NN	0	0	0	0	0	0	0	0	0	0.0		
CALM	0	0	0	0	0	0	0	0	0	0.0		
CAL. TOTALS	0	0	0	0	0	0	0	0	0	0.0		

COL. TOTALS 33.3 22.2 44.4 13.9





FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL, BUBBLER & CCNTIN MET

SURFACE WINDS MORNING DECEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	07.0 TO 15.9	08.0 TO 25.0	09.0 TO 25.0	WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0.0	
NNE		12.5						1	12.5	3.2
ENE								1	0.0	
E			12.5					1	12.5	6.4
ESE								1	0.0	
SSE	12.5							1	12.5	.9
S								1	0.0	
SSW	12.5							1	12.5	1.4
WSW								1	0.0	
W								1	0.0	1.8
WNW								0	0.0	
NNW	12.5							0	0.0	
CALM								0	0.0	
COL. TOTALS	50.0	25.0	25.0					8	0.0	3.8

SURFACE WINDS AFTERNOON DECEMBER, 1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	07.0 TO 15.9	08.0 TO 25.0	09.0 TO 25.0	WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE			11.1					1	11.1	3.2
E	11.1							1	11.1	7.3
ESE								0	0.0	
SSE								0	0.0	
S								0	0.0	
SSW	11.1							1	11.1	2.7
WSW	11.1							1	11.1	4.1
W	11.1							2	22.2	4.0
WNW				11.1				1	11.1	12.7
NNW								0	0.0	
CALM								0	0.0	
COL. TOTALS	44.4	33.3	11.1	11.1				9	0.0	4.9

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE ES#1 FIVOL, BUBBLER & CCNTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR NOVEMBER 1977

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	6	0
101- 250	1	2
251- 500	0	0
501- 750	1	3
751-1000	1	1
1001-1500	0	0
>1500	2	7
TOTAL	11	13

AVERAGE WIND SPEED  
THROUGH MIXED  
LAYER (M/SEC) 8.8 10.2

AVERAGE LAPSE RATE  
BELOW FIRST INVER.  
(DEG C /100M) -00.95 -01.03





### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCUBBY ES#1 H1VOL,BUBBLER & CCNTIN NET

500 METER LEVEL WINDS MORNING DECEMBER, 1977

DIRECTION	00.1 10.0 02.9	03.0 10.0 05.9	WIND SPEEDS 09.0 10.0 09.9	PETERS/SEC 10.0 10.0 15.5	GREATER 16.0 15.0	TOTAL COUNT	PERCENT	SUMMARY TOTAL	AVERAGE SPEED
N						0	0.0	0.0	9.1
NNE			12.5			0	0.0	0.0	
ENE						1	0.0	12.5	
E						0	0.0	0.0	4.2
ESE			12.5			2	0.0	25.0	
SSE	12.5	12.5				1	0.0	12.5	3.7
S						0	0.0	0.0	
SSW						0	0.0	0.0	
WSW						0	0.0	0.0	
W		12.5		12.5		0	0.0	0.0	
WNW						2	0.0	25.0	16.0
NW				12.5		0	0.0	0.0	16.0
NNW						0	0.0	0.0	
CALM						0	0.0	0.0	

COL. TOTALS	12.5	12.5	37.5	12.5	25.0
500 METER LEVEL WINDS AFTERNOON					
DECEMBER, 1977					

DIRECTION	00.1 IO	02.9 IO	05.9 IO	06.C IO	10.C IO	15.5 IO	16.0 TC	GREATER THAN 25.0	TCTAL CCUNT	RCh	SUMMARY TOTAL PERCENT	AVERAGE SPEED
NNE									0		0.0	
NENE									0		0.0	
EENE									0		0.0	6.9
ESEEE			16.6						1		16.6	5.2
SSSE		16.6							1		16.6	
SSSW									0		0.0	
WSW									0		0.0	
NNN									0		0.0	
NNN									0		0.0	
NNN									0		0.0	
NNN									0		0.0	
CALM									0		0.0	
TOTALS									4		16.6	13.2

COL. TOTALS	16.6	16.6	33.3	16.6	16.6
-------------	------	------	------	------	------

	10.0	10.0	33.3	16.0	16.0	E	13.7
TOTALS							

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY ES#1 PIVOL,BUBELER & CONTIN MET

1000 METER LEVEL WINDS MCKING DECEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							0	0.0
NNE							0	0.0
ENE		14.2					1	14.2
E							0	0.0
ESE							0	0.0
SSE		14.2					1	14.2
SSW							0	0.0
WSW							0	0.0
W							0	0.0
WNW		14.2	14.2	14.2			2	28.4
NNW			14.2	14.2	14.2		1	14.2
CALM							0	0.0
COL. TOTALS	28.4	14.2	14.2	28.4	14.2		7	13.1

1000 METER LEVEL WINDS AFTERNOON DECEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							0	0.0
NNE							0	0.0
ENE							0	0.0
E		16.6					1	16.6
ESE							0	0.0
SSE			16.6				1	16.6
SSW							0	0.0
WSW							0	0.0
W							0	0.0
WNW		16.6	16.6	16.6	16.6		2	28.4
NNW							0	0.0
CALM							0	0.0
COL. TOTALS	16.6	33.2	16.6	16.6	16.6		6	15.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY ES#1 PIVOL,BUBELER & CONTIN MET

750 METER LEVEL WINDS MCKING DECEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							0	0.0
NNE							0	0.0
ENE							0	0.0
E							0	0.0
ESE		12.5	12.5				1	12.5
SSE							2	25.0
SSW							0	0.0
WSW							0	0.0
W							0	0.0
WNW			12.5	12.5	12.5		3	37.5
NNW				12.5	12.5		1	12.5
CALM							0	0.0
COL. TOTALS	25.0	25.0	25.0	25.0	25.0		8	11.5

750 METER LEVEL WINDS AFTERNOON DECEMBER,1977

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							0	0.0
NNE							0	0.0
ENE							0	0.0
E							0	0.0
ESE		16.6					1	16.6
SSE							1	16.6
SSW							0	0.0
WSW							0	0.0
W							0	0.0
WNW			16.6	16.6	16.6		2	28.4
NNW							0	0.0
CALM							0	0.0
COL. TOTALS	33.2	16.6	16.6	16.6	33.2		6	11.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 H1VOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNNG DECEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECCND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	RCM	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
SW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	16.6	16.6	16.6	49.8	16.6	6	6	100.0	15.1

COL. TOTALS 16.6 16.6 16.6 49.8 16.6 6 6 100.0 15.1

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECCND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	RCM	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
SW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	25.0	25.0	25.0	25.0	25.0	4	4	100.0	20.2

COL. TOTALS 25.0 25.0 25.0 25.0 25.0 4 4 100.0 20.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 H1VOL,BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNNG DECEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECCND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	RCM	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
SW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	14.2	14.2	14.2	71.2	15.2	7	7	100.0	15.2

COL. TOTALS 14.2 14.2 14.2 71.2 15.2 7 7 100.0 15.2

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECCND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	RCM	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
SW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	16.6	16.6	16.6	33.3	15.9	6	6	100.0	15.9

COL. TOTALS 16.6 16.6 16.6 33.3 15.9 6 6 100.0 15.9



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 HAVCL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING DECEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0  
 IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON DECEMBER, 1977

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 GREATER  
 02.9 05.9 09.9 15.9 25.0  
 IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS

# FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE ES#1 HAVCL,BUBBLER & CONTIN MET

MONTH OF DECEMBER 1977 MORNING

\*\*\*\*\*  
 SFC \*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 00.1 10.1 50.1 75.1 100.1 150.1 200.1 250.1  
 02.9 05.9 10.9 15.9 20.9 25.9 30.9 35.9  
 IC IC IC IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE  
 THICKNESS  
 (METERS)  
 001-100 2.7 8.3 13.8 2.7 8.3 2.7 2.7 2.7  
 101-250 8.3 2.7 5.5 2.7 2.7 8.3 2.7 2.7  
 251-500 2.7 2.7  
 501-750 2.7  
 TOTAL 11.0 2.7 11.0 13.7 19.3 5.4 13.7 2.7 2.7  
 NO INVERSION  
 TOTAL NC. OF OCCURENCES 36

\*\*\*\*\*  
 SFC \*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 00.1 10.1 50.1 75.1 100.1 150.1 200.1 250.1  
 02.9 05.9 10.9 15.9 20.9 25.9 30.9 35.9  
 IC IC IC IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE  
 THICKNESS  
 (METERS)  
 001-100 2.7 8.3 13.8 2.7 8.3 2.7 2.7 2.7  
 101-250 8.3 2.7 5.5 2.7 2.7 8.3 2.7 2.7  
 251-500 2.7 2.7  
 501-750 2.7  
 TOTAL 11.0 2.7 11.0 13.7 19.3 5.4 13.7 2.7 2.7  
 NO INVERSION  
 TOTAL NC. OF OCCURENCES 36

MONTH OF DECEMBER 1977 AFTERNOON

\*\*\*\*\*  
 SFC \*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 00.1 10.1 50.1 75.1 100.1 150.1 200.1 250.1  
 02.9 05.9 10.9 15.9 20.9 25.9 30.9 35.9  
 IC IC IC IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE  
 THICKNESS  
 (METERS)  
 001-100 6.3 2.1 4.2 10.6 8.5 6.3 4.2 4.2  
 101-250 2.1 4.2 6.3 2.1 4.2 2.1 2.1 2.1  
 251-500 2.1 2.1 2.1 2.1 2.1  
 501-750  
 TOTAL 8.4 2.1 8.4 19.0 10.6 14.8 14.8 10.5 6.3 2.1  
 NO INVERSION  
 TOTAL NC. OF OCCURENCES 46

\*\*\*\*\*  
 SFC \*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 00.1 10.1 50.1 75.1 100.1 150.1 200.1 250.1  
 02.9 05.9 10.9 15.9 20.9 25.9 30.9 35.9  
 IC IC IC IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE  
 THICKNESS  
 (METERS)  
 001-100 6.3 2.1 4.2 10.6 8.5 6.3 4.2 4.2  
 101-250 2.1 4.2 6.3 2.1 4.2 2.1 2.1 2.1  
 251-500 2.1 2.1 2.1 2.1 2.1  
 501-750  
 TOTAL 8.4 2.1 8.4 19.0 10.6 14.8 14.8 10.5 6.3 2.1  
 NO INVERSION  
 TOTAL NC. OF OCCURENCES 46

\*\*\*\*\*  
 SFC \*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 00.1 10.1 50.1 75.1 100.1 150.1 200.1 250.1  
 02.9 05.9 10.9 15.9 20.9 25.9 30.9 35.9  
 IC IC IC IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE  
 THICKNESS  
 (METERS)  
 001-100 6.3 2.1 4.2 10.6 8.5 6.3 4.2 4.2  
 101-250 2.1 4.2 6.3 2.1 4.2 2.1 2.1 2.1  
 251-500 2.1 2.1 2.1 2.1 2.1  
 501-750  
 TOTAL 8.4 2.1 8.4 19.0 10.6 14.8 14.8 10.5 6.3 2.1  
 NO INVERSION  
 TOTAL NC. OF OCCURENCES 46

\*\*\*\*\*  
 SFC \*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 00.1 10.1 50.1 75.1 100.1 150.1 200.1 250.1  
 02.9 05.9 10.9 15.9 20.9 25.9 30.9 35.9  
 IC IC IC IC IC IC IC IC  
 CCOUNT PERCENT AVERAGE  
 THICKNESS  
 (METERS)  
 001-100 6.3 2.1 4.2 10.6 8.5 6.3 4.2 4.2  
 101-250 2.1 4.2 6.3 2.1 4.2 2.1 2.1 2.1  
 251-500 2.1 2.1 2.1 2.1 2.1  
 501-750  
 TOTAL 8.4 2.1 8.4 19.0 10.6 14.8 14.8 10.5 6.3 2.1  
 NO INVERSION  
 TOTAL NC. OF OCCURENCES 46

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING JANUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** TOTAL PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE	9.0	9.0					2	18.0	2.0
NNE	9.0						1	9.0	1.8
E							1	9.0	
ESE							1	9.0	3.6
ESE		9.0					1	9.0	3.6
SSE	18.1						1	18.1	3.6
SSE	9.0						1	9.0	2.7
SSW	9.0						1	9.0	2.7
WSW	9.0						1	9.0	.9
W							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	63.1	27.0	9.0				11	0.0	2.3

SURFACE WINDS AFTERNOON JANUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** TOTAL PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE			7.6				1	7.6	4.1
NNE							0	0.0	
E							1	7.6	
ESE			7.6				1	7.6	6.4
SSE	7.6			7.6			2	15.2	
SSE	7.6						1	7.6	1.8
SSW	15.3						2	15.3	2.3
WSW							0	0.0	
W							0	0.0	
WNW	7.6	7.6					3	22.8	4.0
NNW	7.6	7.6					2	15.2	3.6
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	45.7	22.8	22.8	7.6			13	0.0	4.5

# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR DECEMBER 1977

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	4	0
101- 250	1	0
251- 500	1	5
501- 750	1	1
751-1000	1	0
1001-1500	0	0
>1500	0	0
TOTAL	8	6
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	7.6	6.5

AVERAGE LAPSE RATE  
BELOW FIRST INVER. -00.79  
(DEG C /100M)

-00.52

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

100 METER LEVEL WINDS MORNING JANUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							0	0	
NNE							0	0	
ENE			9.0				1	1	6.3
E							0	0	
ESE							0	0	
SE	9.0		9.0	9.0			2	2	4.2
SSE							1	1	10.1
S							0	0	7.7
SSW							1	1	4.6
WSW		9.0					1	1	3.0
W		9.0					1	1	3.0
WNW		9.0					1	1	3.0
NNW		9.0					1	1	3.6
CALM							0	0	0.0
COL. TOTALS	9.0	54.0	27.0	9.0			0	11	5.0

100 METER LEVEL WINDS AFTERNOON JANUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							0	0	
NNE							2	2	1.5
ENE							0	0	
E			7.6				1	1	5.6
ESE							0	0	
SE			7.6				1	1	6.6
SSE							0	0	
S							0	0	
SSW							3	3	5.7
WSW		7.6					1	1	3.9
W		7.6					1	1	3.0
WNW		15.3					2	2	6.5
NNW		7.6					1	1	8.8
CALM							0	0	0.0
COL. TOTALS	22.9	30.4	45.7				0	13	5.1

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING JANUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							0	0	
NNE							0	0	
ENE							0	0	
E							0	0	
ESE			9.0				2	2	3.9
SE	9.0		9.0	9.0			2	2	9.1
SSE							1	1	8.1
S							0	0	
SSW			9.0				1	1	6.7
WSW							0	0	
W							0	0	
WNW							0	0	
NNW							0	0	
CALM							0	0	
COL. TOTALS	9.0	18.1	54.1	18.0			0	11	7.0

200 METER LEVEL WINDS AFTERNOON JANUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** PERCENT AVERAGE SPEED
N							2	2	4.7
NNE							0	0	
ENE							0	0	
E							0	0	
ESE							1	1	3.6
SE	7.6		7.6				1	1	9.7
SSE							1	1	9.7
S							2	2	17.2
SSW							0	0	
WSW							0	0	
W							1	1	7.1
WNW							0	0	
NNW							3	3	5.5
CALM							1	1	11.5
COL. TOTALS	15.2	22.8	45.7	15.2			0	13	6.5





# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

750 METER LEVEL WINDS MORNING JANUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
E	12.5		12.5					1	1	12.5	1.8
ESE								0	0	0.0	6.1
SSE								1	1	12.5	11.2
S								1	1	12.5	5.2
SSW								0	0	0.0	
WSW								0	0	0.0	
W								0	0	0.0	
WNW								0	0	25.0	6.6
NNW								0	0	25.0	10.9
NN								0	0	0.0	
NNW								0	0	0.0	
CALM								0	0	0.0	
COL. TOTALS	12.5	25.0	37.5	25.0				8			7.4

750 METER LEVEL WINDS AFTERNOON JANUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								1	1	10.0	9.3
NNE								0	0	0.0	
ENE								1	1	10.0	4.1
E								0	0	0.0	
ESE								0	0	0.0	
SSE								2	2	20.0	5.0
S								0	0	0.0	
SSW								1	1	10.0	12.2
WSW								0	0	10.0	8.6
W								0	0	0.0	
WNW								1	1	10.0	21.8
NNW								1	1	10.0	18.2
NN								1	1	10.0	15.5
NNW								1	1	10.0	2.7
CALM								0	0	0.0	
COL. TOTALS	10.0	20.0	30.0	10.0	30.0			10			10.5

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

1000 METER LEVEL WINDS MORNING JANUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
E	14.2							1	1	14.2	2.6
ESE								0	0	0.0	
SSE								2	2	28.4	7.8
S								0	0	0.0	
SSW								1	1	14.2	6.6
WSW								0	0	0.0	
W								0	0	0.0	
WNW								0	0	0.0	
NNW								0	0	0.0	
NN								1	1	14.2	5.8
NNW								2	2	28.5	12.6
CALM								0	0	0.0	
COL. TOTALS	14.2	28.4	14.2	42.7				7			7.9

1000 METER LEVEL WINDS AFTERNOON JANUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								2	2	20.0	9.8
NNE								0	0	0.0	
ENE								1	1	10.0	1.1
E								0	0	0.0	
ESE								0	0	0.0	
SSE								0	0	0.0	
S								1	1	10.0	6.8
SSW								2	2	20.0	14.3
WSW								0	0	0.0	
W								0	0	0.0	
WNW								0	0	0.0	
NNW								2	2	20.0	17.1
NN								1	1	10.0	15.5
NNW								0	0	0.0	
CALM								0	0	0.0	
COL. TOTALS	20.0	30.0	40.0	10.0				10			10.2





FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBÉY BS#1 H1VOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING JANUARY, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 15.0 25.0  
 02.9 05.9 09.9 15.9 25.0

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON JANUARY, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 15.0 25.0  
 02.9 05.9 09.9 15.9 25.0

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBÉY BS#1 H1VOL,BUBBLER & CONTIN MET

MONTH OF JANUARY 1978 MORNING

\*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 SFC 001 101 251 501 751 1001 1501 2001 2501  
 THICKNESS TO TO TO TO TO TO TO TO TO  
 (METERS) 100 250 500 750 1000 1500 2000 2500 3000  
 001-100 1.5 6.1 4.6 6.1 1.5 10.7 12.3 3.0 1.5  
 101-250 3.0 3.0 4.6 1.5 6.1 1.5 7.6 3.0 1.5  
 251-500 1.5 1.5 1.5 3.0 1.5 3.0  
 501-750 1.5 1.5 1.5 1.5  
 TOTAL 7.5 4.5 13.7 10.6 13.7 6.0 21.3 15.3 3.0 3.0  
 NO INVERSION

TOTAL NO. OF OCCURENCES

INVERSION TYPE

1 1.5 6.1 4.6 10.7 1.5 1.5 25.9  
 2 3.0 6.1 6.1 10.7 4.6 1.5 39.6  
 3 3.0 3.0 9.2 1.5 1.5 6.1 24.3  
 4 4.6 1.5 1.5  
 5

MONTH OF JANUARY 1978 AFTERNOON

\*\*\*\*\* INVERSION BASE HEIGHT (METERS) \*\*\*\*\*  
 SFC 001 101 251 501 751 1001 1501 2001 2501  
 THICKNESS TO TO TO TO TO TO TO TO TO  
 (METERS) 100 250 500 750 1000 1500 2000 2500 3000  
 001-100 1.2 2.5 6.3 5.0 3.7 10.1 8.8 6.3 2.5 53.9  
 101-250 1.2 1.2 3.7 8.8 7.5 3.7 1.2 1.2 1.2 29.7  
 251-500 3.7 1.2 1.2 1.2 2.5 1.2  
 501-750 1.2 1.2  
 TOTAL 2.4 3.7 11.2 9.9 15.0 13.6 15.0 12.5 7.5 3.7 3.7  
 NO INVERSION

TOTAL NO. OF OCCURENCES

INVERSION TYPE

1 2.5 1.2 2.5 6.3 2.5 6.3 2.5 2.5 26.3  
 2 1.2 2.5 5.0 3.7 7.5 10.1 3.7 7.5 1.2 1.2 44.8  
 3 1.2 5.0 1.2 3.7 1.2 5.0 2.5  
 4 1.2 2.5 1.2  
 5 1.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 HIVOL, BUBBLER & CONTIN MET

SURFACE WINDS MORNING FEBRUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** METERS/SECOND *****	TOTAL COUNT	ROW TOTAL	SUMMARY TOTAL	AVERAGE SPEED
N							0.0	0	0.0	0.0	
NNE							0.0	0	0.0	0.0	
ENE							25.0	2	25.0	25.0	2.0
E							0.0	0	0.0	0.0	
ESE							0.0	0	0.0	0.0	
SE							0.0	0	0.0	0.0	
SSE							0.0	0	0.0	0.0	
S							25.0	2	25.0	25.0	1.1
SSM							0.0	0	0.0	0.0	
SM							0.0	0	0.0	0.0	
WSM							0.0	0	0.0	0.0	
WNW							0.0	0	0.0	0.0	
NW							0.0	0	0.0	0.0	
NNW							37.5	3	37.5	37.5	8.0
CALM							0.0	0	0.0	0.0	
COL. TOTALS	62.5			25.0			12.0	1	12.0	12.0	3.8

SURFACE WINDS AFTERNOON FEBRUARY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** METERS/SECOND *****	TOTAL COUNT	ROW TOTAL	SUMMARY TOTAL	AVERAGE SPEED
N							10.0	1	10.0	10.0	1.4
NNE							10.0	1	10.0	10.0	3.2
ENE							0.0	0	0.0	0.0	
E							10.0	1	10.0	10.0	6.4
ESE							0.0	0	0.0	0.0	
SE							0.0	0	0.0	0.0	
SSE							10.0	1	10.0	10.0	2.3
S							0.0	0	0.0	0.0	
SSM							20.0	2	20.0	20.0	3.6
SM							10.0	1	10.0	10.0	2.3
WSM							0.0	0	0.0	0.0	
WNW							10.0	1	10.0	10.0	1.4
NW							20.0	2	20.0	20.0	5.9
NNW							0.0	0	0.0	0.0	
CALM							0.0	0	0.0	0.0	
COL. TOTALS	50.0	30.0	20.0				10	10	10	10	3.6

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBAY BS#1 HIVOL, BUBBLER & CONTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR JANUARY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCE	AFTERNOON OCCURENCE
0- 100	6	0
101- 250	4	5
251- 500	1	6
501- 750	0	1
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	11	12

AVERAGE WIND SPEED  
THROUGH MIXED  
LAYER (M/SEC) 4.7 5.9

AVERAGE LAPSE RATE  
BELOW FIRST INVER.  
(DEG C /100M) -01.16 -00.85

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N							1	12.5	1.3
NNE							1	12.5	3.6
NNE							1	12.5	2.6
ENE							1	12.5	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							1	12.5	5.5
SSW							1	12.5	2.4
WSW							1	12.5	-7
WSW							0	0.0	
WNW							1	12.5	
WNW							0	0.0	
NNW							2	25.0	12.1
NNW							0	0.0	
CALM							0	0.0	
OL. TOTALS	50.0	25.0	12.5	12.5			8		5.0

100 METER LEVEL WINDS AFTERNOON FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N							0	0.0	
NNE							1	10.0	2.1
NNE							1	10.0	4.1
ENE							1	10.0	5.6
ENE							1	10.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							2	20.0	4.9
SSW							1	10.0	2.4
WSW							1	10.0	
WSW							0	0.0	
WNW							1	10.0	6.8
WNW							2	20.0	3.4
NNW							0	0.0	
CALM							0	0.0	
OL. TOTALS	50.0	30.0	20.0				10		4.0

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N							2	25.0	5.8
NNE							0	0.0	
NNE							0	0.0	
ENE							1	12.5	2.4
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							1	12.5	6.4
SSW							0	0.0	
WSW							0	0.0	
WSW							1	12.5	5.9
WNW							1	12.5	4.1
WNW							2	25.0	15.3
NNW							0	0.0	
CALM							0	0.0	
OL. TOTALS	12.5	37.5	25.0	12.5	12.5		8		7.6

200 METER LEVEL WINDS AFTERNOON FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N							1	10.0	3.1
NNE							0	0.0	
NNE							1	10.0	5.2
ENE							1	10.0	7.6
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							1	10.0	7.9
WSW							3	30.0	4.5
WSW							2	20.0	8.5
WNW							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							10		5.4
COL. TOTALS	70.0	30.0					10		



## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER &amp; CONTIN MET

500 METER LEVEL WINDS MORNING FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N			16.6			0	0.0	
NNE			16.6			1	16.6	9.3
ENE			16.6			1	16.6	6.6
E						0	0.0	
ESE						0	0.0	
SE						0	0.0	
SSE						0	0.0	
SSW						0	0.0	
WSW				16.6		0	0.0	14.1
W						1	16.6	
WNW						0	0.0	
NW			16.6			1	16.6	13.9
NNW		16.6		16.6		2	33.2	14.7
CALM						0	0.0	
COL. TOTALS	16.6	33.2	33.2	16.6		6		12.2

500 METER LEVEL WINDS AFTERNOON FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N						0	0.0	
NNE						0	0.0	
ENE						0	0.0	
E	11.1					1	11.1	2.8
ESE			11.1			1	11.1	8.1
SE						0	0.0	
SSE						0	0.0	
SSW						0	0.0	
WSW						0	0.0	
W			11.1			1	11.1	9.9
WNW			11.1			1	11.1	9.9
NW			11.1	11.1		2	22.2	9.5
NNW						0	0.0	
CALM						0	0.0	
COL. TOTALS	11.1		77.7	11.1		9		7.4

## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER &amp; CONTIN MET

300 METER LEVEL WINDS MORNING FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N		12.5	12.5			2	25.0	6.5
NNE						1	12.5	
ENE		12.5				1	12.5	4.6
E						0	0.0	
ESE						0	0.0	
SE						0	0.0	
SSE						0	0.0	
SSW						0	0.0	
WSW			12.5			1	12.5	8.4
W						0	0.0	
WNW		12.5				0	0.0	
NW				12.5		1	12.5	5.1
NNW		12.5		12.5		2	25.0	13.2
CALM						0	0.0	
COL. TOTALS	50.0	25.0	12.5	12.5		8		8.9

300 METER LEVEL WINDS AFTERNOON FEBRUARY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N						0	0.0	
NNE						0	0.0	
ENE		10.0				1	10.0	7.6
E						0	0.0	
ESE			10.0			1	10.0	4.2
SE						0	0.0	
SSE						0	0.0	
SSW						0	0.0	
WSW						0	0.0	
W						0	0.0	
WNW						0	0.0	
NW		10.0				2	20.0	8.6
NNW		10.0				2	20.0	5.7
CALM						0	0.0	
COL. TOTALS	40.0	50.0	10.0	10.0		10		7.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)  
LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING FEBRUARY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW TOTAL	SUMMARY PERCENT AVERAGE SPEED
N							1	33.3	11.2
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WS							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3	66.6			3		9.6

1000 METER LEVEL WINDS AFTERNOON FEBRUARY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW TOTAL	SUMMARY PERCENT AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WS							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			42.6	28.4	28.5		7		11.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)  
LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING FEBRUARY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW TOTAL	SUMMARY PERCENT AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WS							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3	66.6			3		10.1

750 METER LEVEL WINDS AFTERNOON FEBRUARY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW TOTAL	SUMMARY PERCENT AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WS							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			56.8	14.2	28.5		7		12.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING FEBRUARY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0	0	0	0	0	0	0.0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0.0	
ENE	0	0	0	0	0	0	0.0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0.0	
SSE	0	0	0	0	0	0	0.0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0.0	
W	1	0	0	0	0	0	100.0	1	100.0	15.3
WNW	0	0	0	0	0	0	0.0	0	0.0	
NW	0	0	0	0	0	0	0.0	0	0.0	
NNW	0	0	0	0	0	0	0.0	0	0.0	
CALM	0	0	0	0	0	0	0.0	0	0.0	
COL. TOTALS	1	0	0	0	0	0	100.0	1		15.3

2000 METER LEVEL WINDS AFTERNOON FEBRUARY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0	0	0	0	0	0	0.0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0.0	
ENE	0	0	0	0	0	0	0.0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0.0	
SSE	0	0	0	0	0	0	0.0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0.0	
W	1	0	0	0	0	0	16.6	1	16.6	16.4
WNW	3	0	0	0	0	0	49.8	3	49.8	11.7
NW	2	0	0	0	0	0	33.2	2	33.2	11.9
NNW	0	0	0	0	0	0	0.0	0	0.0	
CALM	0	0	0	0	0	0	0.0	0	0.0	
COL. TOTALS	6	0	0	0	0	0	100.0	6		12.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING FEBRUARY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0	0	0	0	0	0	0.0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0.0	
ENE	0	0	0	0	0	0	0.0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0.0	
SSE	0	0	0	0	0	0	0.0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0.0	
W	1	0	0	0	0	0	50.0	1	50.0	10.4
WNW	0	0	0	0	0	0	0.0	0	0.0	
NW	0	0	0	0	0	0	0.0	0	0.0	
NNW	1	0	0	0	0	0	50.0	1	50.0	10.5
CALM	0	0	0	0	0	0	0.0	0	0.0	
COL. TOTALS	2	0	0	0	0	0	100.0	2		10.4

1500 METER LEVEL WINDS AFTERNOON FEBRUARY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0	0	0	0	0	0	0.0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0.0	
ENE	0	0	0	0	0	0	0.0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0.0	
SSE	0	0	0	0	0	0	0.0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0.0	
W	1	0	0	0	0	0	16.6	1	16.6	9.4
WNW	1	0	0	0	0	0	16.6	1	16.6	13.5
NW	2	0	0	0	0	0	33.2	2	33.2	15.5
NNW	2	0	0	0	0	0	33.2	2	33.2	12.0
CALM	0	0	0	0	0	0	0.0	0	0.0	
COL. TOTALS	6	0	0	0	0	0	100.0	6		13.0



### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER & CCNTIN MET

2500 METER LEVEL WINDS MORNING FEBRUARY, 1978

[illegible]

### FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOEY BS#1 H1VOL, BUBBLER & CONTIN MET

MONTH OF FEBRUARY 1978 MORNING

[illegible]

## COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON FEBRUARY, 1978

DIRECTION	00.1 02.9	03.0 10.0	WIND SPEEDS 06.0 10.0 15.9	METERS/SECOND 19.0 25.0	SECTOR EASTERN 25.0	TOTAL COUNT	FROM TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
NNE						0	0	0.0	
NNN						0	0	0.0	
EEN						0	0	0.0	
EEU						0	0	0.0	
SES						0	0	0.0	
SUU						0	0	0.0	
WSW						0	0	0.0	
WNW						0	0	0.0	
NNN						1	1	100.0	18.6

MONTH OF FEBRUARY 1978 AFTERNOON

[illegible]

## COL. TOTALS

100-0

18.6

10

10

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	07.0 TO 15.9	08.0 TO 25.0	METERS/SECOND TO 10 TO 15.0	GREATER THAN 25.0	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE								0	0.0	
E								1	7.6	
ESE	7.6							1	7.6	5.0
SSE	23.0	15.3						2	38.3	2.8
SSW								0	0.0	
WSW								0	0.0	
WNW	7.6	7.6						0	0.0	
NNW	7.6			7.6				3	22.8	6.8
CALM	23.0							3	23.0	1.5
COL. TOTALS	61.2	30.5		7.6				13	0.0	3.5

SURFACE WINDS AFTERNOON MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	07.0 TO 15.9	08.0 TO 25.0	METERS/SECOND TO 10 TO 15.0	GREATER THAN 25.0	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE								1	7.1	6.8
E	7.1							1	7.1	2.7
ESE								0	0.0	
SSW								1	7.1	5.9
WSW	14.2							1	14.2	2.0
WNW								2	14.2	9.6
NNW								2	14.2	6.9
CALM								2	14.2	7.7
COL. TOTALS	21.3	21.3	42.6	14.2				14	0.0	6.3

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR FEBRUARY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	3	1
101- 250	2	2
251- 500	1	4
501- 750	1	3
751-1000	1	0
1001-1500	0	0
>1500	0	0
TOTAL	8	10
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	6.2	5.1

AVERAGE LAPSE RATE  
BELOW FIRST INVER. -01.36  
(DEG C /100M)

-01.14





FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CCNTIN MET

500 METER LEVEL WINDS MORNING MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	8.3						2	16.6	8.3
SSE							1	8.3	14.8
SSW							1	8.3	16.1
WSW							1	8.3	9.3
W							0	0.0	
WNW							2	16.6	9.6
NNW	8.3	8.3					2	25.0	12.4
CALM							0	0.0	5.3

COL. TOTALS 8.3 16.6 16.6 49.9 8.3 10.3

500 METER LEVEL WINDS AFTERNOON MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							1	8.3	4.3
NNE							0	0.0	
NENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW							2	16.6	9.4
WSW							1	8.3	1.5
W							1	8.3	9.4
WNW							1	8.3	13.3
NNW							1	8.3	12.7
CALM							0	0.0	6.2

COL. TOTALS 8.3 24.9 24.9 33.2 8.3 9.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

300 METER LEVEL WINDS MORNING MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							2	15.2	5.9
NNE							0	0.0	
NENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	7.6						1	7.6	5.0
SSE							1	7.6	11.2
SSW							1	7.6	16.2
WSW							1	7.6	15.1
W							0	0.0	
WNW							1	7.6	7.8
NNW							1	7.6	15.9
CALM							5	38.2	10.6

COL. TOTALS 22.8 22.8 45.8 7.6 10.4

300 METER LEVEL WINDS AFTERNOON MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** ROW TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N							1	7.6	2.8
NNE							0	0.0	
NENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
SSW							3	22.8	8.1
WSW							0	0.0	
W							1	7.6	3.8
WNW							2	15.2	12.3
NNW							3	22.8	11.7
CALM							1	7.6	17.5

COL. TOTALS 15.2 15.2 22.8 30.5 15.3 10.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING									
MARCH, 1978									
DIRECTION	00.1	03.0	06.0	09.0	12.0	15.0	18.0	21.0	24.0
N									
NNE									
ENE									
E									
ESE									
SSE									
SSW									
WSW									
W									
WNW									
NNW									
CALM									
COL. TOTALS	9.0	9.0	27.1	36.0	18.0				

1000 METER LEVEL WINDS AFTERNOON

MARCH, 1978									
DIRECTION	00.1	03.0	06.0	09.0	12.0	15.0	18.0	21.0	24.0
N									
NNE									
ENE									
E									
ESE									
SSE									
SSW									
WSW									
W									
WNW									
NNW									
CALM									
COL. TOTALS	9.0	9.0	27.1	36.0	18.0				

1000 METER LEVEL WINDS MORNING

MARCH, 1978									
DIRECTION	00.1	03.0	06.0	09.0	12.0	15.0	18.0	21.0	24.0
N									
NNE									
ENE									
E									
ESE									
SSE									
SSW									
WSW									
W									
WNW									
NNW									
CALM									
COL. TOTALS	9.0	9.0	27.1	36.0	18.0				

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING									
MARCH, 1978									
DIRECTION	00.1	03.0	06.0	09.0	12.0	15.0	18.0	21.0	24.0
N									
NNE									
ENE									
E									
ESE									
SSE									
SSW									
WSW									
W									
WNW									
NNW									
CALM									
COL. TOTALS	11.1	22.2	33.3	33.3					

1000 METER LEVEL WINDS AFTERNOON

MARCH, 1978									
DIRECTION	00.1	03.0	06.0	09.0	12.0	15.0	18.0	21.0	24.0
N									
NNE									
ENE									
E									
ESE									
SSE									
SSW									
WSW									
W									
WNW									
NNW									
CALM									
COL. TOTALS	11.1	22.2	33.3	33.3					

1000 METER LEVEL WINDS MORNING

MARCH, 1978									
DIRECTION	00.1	03.0	06.0	09.0	12.0	15.0	18.0	21.0	24.0
N									
NNE									
ENE									
E									
ESE									
SSE									
SSW									
WSW									
W									
WNW									
NNW									
CALM									
COL. TOTALS	9.0	27.0	18.0	27.0	18.0				

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING

MARCH,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 TOTAL COUNT  
 ROW  
 SUMMARY  
 TOTAL COUNT  
 PERCENT  
 AVERAGE  
 SPEED

N	0.0					
NNE	0.0					
ENE	0.0					
E	0.0					
ESE	0.0					
SSE	0.0					
S	0.0					
SSW	0.0					
WSW	0.0					
W	0.0					
WNW	0.0					
NNW	0.0					
CALM	0.0					
COL. TOTALS	0.0					

COL. TOTALS

2000 METER LEVEL WINDS AFTERNOON

MARCH,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 TOTAL COUNT  
 ROW  
 SUMMARY  
 TOTAL COUNT  
 PERCENT  
 AVERAGE  
 SPEED

N	0.0					
NNE	0.0					
ENE	0.0					
E	0.0					
ESE	0.0					
SSE	0.0					
S	0.0					
SSW	0.0					
WSW	0.0					
W	0.0					
WNW	0.0					
NNW	0.0					
CALM	0.0					
COL. TOTALS	0.0					

COL. TOTALS

2000 METER LEVEL WINDS MORNING

MARCH,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 TOTAL COUNT  
 ROW  
 SUMMARY  
 TOTAL COUNT  
 PERCENT  
 AVERAGE  
 SPEED

N	0.0					
NNE	0.0					
ENE	0.0					
E	0.0					
ESE	0.0					
SSE	0.0					
S	0.0					
SSW	0.0					
WSW	0.0					
W	0.0					
WNW	0.0					
NNW	0.0					
CALM	0.0					
COL. TOTALS	0.0					

COL. TOTALS

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING

MARCH,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 TOTAL COUNT  
 ROW  
 SUMMARY  
 TOTAL COUNT  
 PERCENT  
 AVERAGE  
 SPEED

N	0.0					
NNE	0.0					
ENE	0.0					
E	0.0					
ESE	0.0					
SSE	0.0					
S	0.0					
SSW	0.0					
WSW	0.0					
W	0.0					
WNW	0.0					
NNW	0.0					
CALM	0.0					
COL. TOTALS	0.0					

COL. TOTALS

1500 METER LEVEL WINDS AFTERNOON

MARCH,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 TOTAL COUNT  
 ROW  
 SUMMARY  
 TOTAL COUNT  
 PERCENT  
 AVERAGE  
 SPEED

N	0.0					
NNE	0.0					
ENE	0.0					
E	0.0					
ESE	0.0					
SSE	0.0					
S	0.0					
SSW	0.0					
WSW	0.0					
W	0.0					
WNW	0.0					
NNW	0.0					
CALM	0.0					
COL. TOTALS	0.0					

COL. TOTALS

1500 METER LEVEL WINDS MORNING

MARCH,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 TOTAL COUNT  
 ROW  
 SUMMARY  
 TOTAL COUNT  
 PERCENT  
 AVERAGE  
 SPEED

N	0.0					
NNE	0.0					
ENE	0.0					
E	0.0					
ESE	0.0					
SSE	0.0					
S	0.0					
SSW	0.0					
WSW	0.0					
W	0.0					
WNW	0.0					
NNW	0.0					
CALM	0.0					
COL. TOTALS	0.0					

COL. TOTALS



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HAVOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	SUMMARY TOTAL PERCENT	ROM COUNT
N							0.0	0
NNE							0.0	0
ENE							0.0	0
E							0.0	0
ESE							0.0	0
SE							0.0	0
SSE							0.0	0
S							0.0	0
SSW							0.0	0
WSW							0.0	0
WNW							0.0	0
NNW							0.0	0
CALM							0.0	0
COL. TOTALS	100.0						0.0	1

100.0

3.3

3.3

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON MARCH, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	SUMMARY TOTAL PERCENT	ROM COUNT
N							0.0	0
NNE							0.0	0
ENE							0.0	0
E							0.0	0
ESE							0.0	0
SE							0.0	0
SSE							0.0	0
S							0.0	0
SSW							0.0	0
WSW							0.0	0
WNW							0.0	0
NNW							0.0	0
CALM							0.0	0
COL. TOTALS	100.0						0.0	4

23.4

21.7

22.5

COL. TOTALS

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HAVOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING MARCH, 1978

THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	THAN 3000	TOTAL
001-100	3.9	3.9	3.9	3.9	3.9	7.8	11.7	5.8	3.9	3.9	50.5
101-250		1.9	3.9	1.9	1.9	7.8	3.9	1.9			25.1
251-500		1.9	1.9		1.9						9.6
501-750		1.9									1.9
TOTAL	7.8	9.6	9.7	5.8	11.7	5.8	17.5	15.6	7.7	3.9	3.0
NO INVERSION											49
INVERSION TYPE											

30.1

34.4

26.1

8.0

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON MARCH, 1978

THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	THAN 3000	TOTAL
001-100	1.5	1.5	3.0	12.3	7.6	6.1	15.3	4.6	1.5	6.1	70.3
101-250		1.5	7.6	4.6	6.1	3.0					25.8
251-500			1.5								3.0
501-750											
TOTAL	3.0	13.8	12.1	16.9	7.6	12.2	18.3	7.6	1.5	6.1	0.0
NO INVERSION											65
INVERSION TYPE											

21.2

44.2

27.3

6.0

COL. TOTALS

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,8UBBLER & CCNTIN MET

SURFACE WINDS MORNING APRIL, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROW SUMMARY	PERCENT	AVERAGE SPEED
N							0	0.0	0.0	
NNE							1	9.0	9.0	4.1
ENE		9.0					1	9.0	9.0	
E		18.1					3	27.1	27.1	5.1
ESE		9.0	9.0				1	9.0	9.0	4.1
SE							0	0.0	0.0	
SSE							0	0.0	0.0	
SSW	9.0						1	9.0	9.0	1.4
WSW							0	0.0	0.0	
WNW							0	0.0	0.0	
NNW	9.0		9.0				2	18.0	18.0	5.2
W	18.1						2	18.1	18.1	2.5
CALM							1	9.0	9.0	
COL. TOTALS	36.1	36.1	18.0				11			3.6

SURFACE WINDS AFTERNOON APRIL, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROW SUMMARY	PERCENT	AVERAGE SPEED
N							0	0.0	0.0	
NNE							0	0.0	0.0	
ENE	20.0						2	20.0	20.0	4.1
E							0	0.0	0.0	
ESE	10.0		10.0	20.0			3	30.0	30.0	8.6
SE							0	0.0	0.0	8.7
SSE							0	0.0	0.0	
SSW			10.0				1	10.0	10.0	6.4
WSW							0	0.0	0.0	
WNW							0	0.0	0.0	
NNW	10.0		10.0				2	20.0	20.0	6.1
W			10.0				1	10.0	10.0	8.6
CALM							0	0.0	0.0	
COL. TOTALS	40.0	40.0	20.0				10			7.0

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,8UBBLER & CONTIN MET

MARCH 1978

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR

MIXING HEIGHT (METERS)

0- 100

101- 250

251- 500

501- 750

751-1000

1001-1500

>1500

TOTAL

MORNING OCCURENCES

AFTERNOON OCCURENCES

3

6

2

2

1

0

0

14

0

4

13

8.6

6.9

-01.11

-01.25

AVERAGE LAPSE RATE

BELOW FIRST INVER.

(DEG C /100M)

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING									
APRIL, 1978									
***** WIND SPEEDS METERS/SECOND *****									
00.1 03.0 06.0 10.0 16.0 25.0									
TO TO TO TO TO									
02.9 05.9 09.9 15.9 25.0									
DIRECTION	TOTAL	PERCENT	AVERAGE	*****					
	COUNT		SPEED	ROW	TOTAL	PERCENT	AVERAGE	SUMMARY	
N	0	0.0	3.0	0	0	0.0			
NNE	2	18.0		0	0	0.0			
ENE	1	9.0	8.1	1	1	9.0			
E	3	27.3	7.6	3	3	27.3			
ESE	1	9.0	5.9	1	1	9.0			
SSE	0	0.0		0	0	0.0			
SSW	0	0.0		0	0	0.0			
WSW	0	0.0		0	0	0.0			
WSW	0	0.0		0	0	0.0			
WNW	1	9.0	7.1	1	1	9.0			
NNW	0	0.0		0	0	0.0			
CALM	0	0.0		0	0	0.0			
COL. TOTALS	18.0	45.0	36.1	11	11	5.6			

100 METER LEVEL WINDS AFTERNOON									
APRIL, 1978									
***** WIND SPEEDS METERS/SECOND *****									
00.1 03.0 06.0 10.0 16.0 25.0									
TO TO TO TO TO									
02.9 05.9 09.9 15.9 25.0									
DIRECTION	TOTAL	PERCENT	AVERAGE	*****					
	COUNT		SPEED	ROW	TOTAL	PERCENT	AVERAGE	SUMMARY	
N	0	0.0		0	0	0.0			
NNE	0	0.0		0	0	0.0			
ENE	2	20.0	4.6	2	2	20.0			
E	1	10.0	8.3	1	1	10.0			
ESE	3	30.0	11.1	3	3	30.0			
SSE	0	0.0		0	0	0.0			
SSW	1	10.0	7.9	1	1	10.0			
WSW	0	0.0		0	0	0.0			
WSW	0	0.0		0	0	0.0			
WNW	1	10.0	4.9	1	1	10.0			
NNW	1	10.0	6.5	1	1	10.0			
CALM	0	0.0		0	0	0.0			
COL. TOTALS	10.0	20.0	50.0	10.0	10.0	7.8			

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING									
APRIL, 1978									
***** WIND SPEEDS METERS/SECOND *****									
00.1 03.0 06.0 10.0 16.0 25.0									
TO TO TO TO TO									
02.9 05.9 09.9 15.9 25.0									
DIRECTION	TOTAL	PERCENT	AVERAGE	*****					
	COUNT		SPEED	ROW	TOTAL	PERCENT	AVERAGE	SUMMARY	
N	0	0.0		0	0	0.0			
NNE	1	9.0		1	1	9.0			
ENE	0	0.0		0	0	0.0			
E	2	18.0		2	2	18.0			
ESE	4	36.4	9.0	4	4	36.4			
SSE	1	9.0		1	1	9.0			
SSW	0	0.0		0	0	0.0			
WSW	0	0.0		0	0	0.0			
WSW	0	0.0		0	0	0.0			
WNW	0	0.0		0	0	0.0			
NNW	1	9.0		1	1	9.0			
CALM	0	0.0		0	0	0.0			
COL. TOTALS	36.0	36.1	18.0	9.0	11	8.0			

200 METER LEVEL WINDS AFTERNOON									
APRIL, 1978									
***** WIND SPEEDS METERS/SECOND *****									
00.1 03.0 06.0 10.0 16.0 25.0									
TO TO TO TO TO									
02.9 05.9 09.9 15.9 25.0									
DIRECTION	TOTAL	PERCENT	AVERAGE	*****					
	COUNT		SPEED	ROW	TOTAL	PERCENT	AVERAGE	SUMMARY	
N	0	0.0		0	0	0.0			
NNE	0	0.0		0	0	0.0			
ENE	1	10.0		1	1	10.0			
E	2	20.0		2	2	20.0			
ESE	2	20.0	10.0	2	2	20.0			
SSE	0	0.0		0	0	0.0			
SSW	1	10.0		1	1	10.0			
WSW	0	0.0		0	0	0.0			
WSW	0	0.0		0	0	0.0			
WNW	1	10.0	10.0	1	1	10.0			
NNW	1	10.0	10.0	1	1	10.0			
CALM	0	0.0		0	0	0.0			
COL. TOTALS	20.0	50.0	20.0	10.0	10	9.0			



### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER & CONTIN MET

APRIL, 1978

DIRECTION	** ** *	* WIND SPEEDS * METERS/SECOND	* LESS GREATER	* TOTAL COUNT	SUMMARY	AVERAGE
	00-1 TO 10	03-0 TO 10	06-0 TO 10	THIN 25-0	TOTAL PERCENT	SPEED
02-9	00-1	03-0	06-0	THIN 25-0	TOTAL PERCENT	SPEED

[illegible]

OL. TOTALS	12.5	12.5	12.5	37.5	25.0	8	11.5
------------	------	------	------	------	------	---	------

APRIL 1978

DIRECTION	** WIND SPEEDS **	METERS / SECOND	GREATER THAN	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
00-9	03.0	10.0	16.0	ROM		
10	10	10	10			
02-9	05.0	15.0	25.0			

[illegible]

Category	20-0	30-0	10-0	10-0	11-2
TOTALS	20-0	30-0	10-0	10-0	11-2

[illegible]

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING

APRIL, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0		0.0	
NNE							0		0.0	
NNE							0		0.0	
ENE							0		0.0	
ENE							0		0.0	
ESE							1		16.6	9.8
ESE							1		16.6	22.5
SSE							1		16.6	20.8
SSE							1		16.6	4.8
SSW							0		0.0	
SSW							0		0.0	
WSW							0		0.0	
WSW							0		0.0	
WNW							1		16.6	7.9
WNW							0		0.0	
NNW							1		16.6	21.9
NNW							0		0.0	
CALM							0		0.0	
COL. TOTALS	16.6	33.2	49.8				6			14.6

COL. TOTALS

750 METER LEVEL WINDS AFTERNOON

APRIL, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0		0.0	
NNE							0		0.0	
NNE							0		0.0	
ENE							0		0.0	
ENE							0		0.0	
ESE							0		0.0	
ESE							0		0.0	
SSE							0		0.0	
SSE							0		0.0	
SSW							0		0.0	
SSW							0		0.0	
WSW							0		0.0	
WSW							0		0.0	
WNW							0		0.0	
WNW							0		0.0	
NNW							0		0.0	
CALM							0		0.0	
COL. TOTALS	30.0	30.0	20.0	20.0	20.0		10			10.0

COL. TOTALS

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING

APRIL, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0		0.0	
NNE							0		0.0	
NNE							0		0.0	
ENE							0		0.0	
ENE							0		0.0	
ESE							0		0.0	
ESE							1		16.6	8.3
SSE							2		33.2	20.8
SSE							0		0.0	13.6
SSW							0		0.0	
SSW							0		0.0	
WSW							0		0.0	
WSW							0		0.0	
WNW							0		0.0	
WNW							1		16.6	10.2
NNW							1		16.6	22.0
NNW							0		0.0	
CALM							0		0.0	
COL. TOTALS	33.2	16.6	49.8				6			14.7

COL. TOTALS

1000 METER LEVEL WINDS AFTERNOON

APRIL, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROW COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0		0.0	
NNE							0		0.0	
NNE							0		0.0	
ENE							0		0.0	
ENE							1		16.6	8.8
ESE							0		0.0	
ESE							1		16.6	11.3
SSE							1		16.6	10.8
SSE							1		16.6	10.1
SSW							0		0.0	
SSW							0		0.0	
WSW							0		0.0	
WSW							0		0.0	
WNW							0		0.0	
WNW							1		16.6	14.2
NNW							1		16.6	15.7
NNW							0		0.0	
CALM							0		0.0	
COL. TOTALS	16.6	83.0					6			11.8

COL. TOTALS

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING APRIL,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
E								0	0	0.0	
ESE								0	0	0.0	
SSE								1	1	16.6	11.1
S								2	2	33.2	12.8
SSW								1	1	16.6	5.7
WSW								0	0	0.0	
WS								1	1	16.6	15.0
WNW								0	0	0.0	
NW								0	0	0.0	
NNW								1	1	16.6	26.5
CALM								0	0	0.0	
COL. TOTALS	16.6	16.6	33.2	16.6	16.6			6			14.0

2000 METER LEVEL WINDS AFTERNOON APRIL,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
ENE								1	1	25.0	5.8
E								0	0	0.0	
ESE								0	0	0.0	
SSE								0	0	0.0	
S								1	1	25.0	10.9
SSW								0	0	0.0	
WSW								0	0	0.0	
WS								0	0	0.0	
WNW								1	1	25.0	15.5
NW								1	1	25.0	13.6
NNW								0	0	0.0	
CALM								0	0	0.0	
COL. TOTALS	25.0			75.0				4			11.4

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING APRIL,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
E								0	0	0.0	
ESE								0	0	0.0	
SSE								3	3	49.8	13.7
S								1	1	16.6	6.8
SSW								0	0	0.0	
WSW								0	0	0.0	
WS								0	0	0.0	
WNW								1	1	16.6	13.7
NW								0	0	0.0	
NNW								1	1	16.6	19.6
CALM								0	0	0.0	
COL. TOTALS	33.2	33.2	33.2	33.2				6			13.5

1500 METER LEVEL WINDS AFTERNOON APRIL,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** ROW COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
ENE								1	1	16.6	7.3
E								0	0	0.0	
ESE								0	0	0.0	
SSE								1	1	16.6	47.4
S								2	2	33.2	10.7
SSW								0	0	0.0	
WSW								0	0	0.0	
WS								0	0	0.0	
WNW								0	0	0.0	
NW								1	1	16.6	19.0
NNW								0	0	0.0	
CALM								0	0	0.0	
COL. TOTALS	33.2	33.2	33.2	33.2	33.2			6			20.6



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CD - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING				APRIL, 1978			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY AVERAGE TOTAL COUNT PERCENT SPEED
N							0.0
NNE							0.0
ENE							0.0
E							0.0
ESE							0.0
SSE							0.0
S							0.0
SSW							0.0
WSW							0.0
WNW							0.0
NNW							0.0
CALM							0.0
COL. TOTALS							0.0

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON				APRIL, 1978			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY AVERAGE TOTAL COUNT PERCENT SPEED
N							0.0
NNE							0.0
ENE							0.0
E							0.0
ESE							0.0
SSE							0.0
S							0.0
SSW							0.0
WSW							0.0
WNW							0.0
NNW							0.0
CALM							0.0
COL. TOTALS							0.0

COL. TOTALS

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CD - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING				APRIL, 1978			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY AVERAGE TOTAL COUNT PERCENT SPEED
N							0.0
NNE							0.0
ENE							0.0
E							0.0
ESE							0.0
SSE							0.0
S							0.0
SSW							0.0
WSW							0.0
WNW							0.0
NNW							0.0
CALM							0.0
COL. TOTALS							0.0

2500 METER LEVEL WINDS AFTERNOON				APRIL, 1978			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY AVERAGE TOTAL COUNT PERCENT SPEED
N							0.0
NNE							0.0
ENE							0.0
E							0.0
ESE							0.0
SSE							0.0
S							0.0
SSW							0.0
WSW							0.0
WNW							0.0
NNW							0.0
CALM							0.0
COL. TOTALS							0.0

2500 METER LEVEL WINDS MORNING				APRIL, 1978			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY AVERAGE TOTAL COUNT PERCENT SPEED
N							0.0
NNE							0.0
ENE							0.0
E							0.0
ESE							0.0
SSE							0.0
S							0.0
SSW							0.0
WSW							0.0
WNW							0.0
NNW							0.0
CALM							0.0
COL. TOTALS							0.0

COL. TOTALS



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL.8UBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING MAY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROM SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				1	8.3	6.3
NNE			8.3	8.3			1	8.3	12.1
ENE							1	0.0	
E		8.3					1	8.3	4.2
ESE		8.3	8.3				2	16.6	15.8
SSE		8.3					1	8.3	9.6
S		8.3					1	8.3	5.7
SSW		8.3					1	8.3	5.4
WSW							0	0.0	
W							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM	8.3						1	8.3	3.3
COL. TOTALS	58.1	24.9	16.6				12	0.0	7.0

100 METER LEVEL WINDS AFTERNOON MAY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROM SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			7.6	15.3			3	22.9	7.9
NNE			7.6				1	7.6	9.9
ENE							0	0.0	
E		7.6					1	7.6	5.3
ESE							0	0.0	
SSE		7.6	7.6				2	15.2	3.3
S		7.6					1	7.6	8.1
SSW		7.6					1	7.6	7.0
WSW							0	0.0	
W				7.6			1	7.6	13.2
WNW			7.6				1	7.6	6.2
NNW							1	7.6	1.8
CALM	7.6						0	0.0	
COL. TOTALS	7.6	38.0	45.7	7.6			13	0.0	6.7

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL.8UBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING MAY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROM SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			8.3				2	16.6	8.6
NNE			8.3				1	8.3	13.5
ENE							0	0.0	18.3
E		8.3					1	8.3	
ESE		8.3	8.3				2	16.6	13.5
SSE		8.3	16.6	8.3			4	33.2	8.8
S							0	0.0	
SSW			8.3				1	8.3	7.9
WSW			8.3				1	8.3	6.2
W							0	0.0	
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	24.9	33.2	24.9	16.6			12	0.0	10.4

200 METER LEVEL WINDS AFTERNOON MAY, 1978									
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROM SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			7.6	15.3			3	22.9	8.9
NNE			7.6				1	7.6	16.5
ENE							0	0.0	
E		7.6					1	7.6	3.4
ESE							0	0.0	
SSE		7.6	7.6				2	15.2	5.3
S		7.6					1	7.6	10.3
SSW		7.6					1	7.6	3.9
WSW							0	0.0	
W				7.6			1	7.6	7.7
WNW			7.6				1	7.6	24.1
NNW							0	0.0	
CALM	7.6						0	0.0	4.4
COL. TOTALS	7.6	30.4	22.8	22.9	15.2		13	0.0	8.6



## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER &amp; CONTIN MET

500 METER LEVEL WINDS MORNING

MAY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECOND TO	GREATER THAN	TOTAL COUNT	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N						9.0		1	1	9.0	10.2
NNE						9.0		0	0	0.0	21.8
NNE						9.0		1	1	9.0	17.6
E						9.0		1	1	9.0	6.7
ESE			9.0			9.0		1	1	9.0	23.0
SSE			9.0			9.0		1	1	9.0	5.1
S			9.0			9.0		1	1	9.0	15.5
SSW				9.0		9.0		1	1	9.0	4.1
WSW						9.0		1	1	9.0	7.5
WNW			9.0			9.0		1	1	9.0	16.5
NNW						9.0		0	0	0.0	
CALM								0	0	0.0	
COL. TOTALS	18.0	27.0	18.0	36.0				11			12.3

COL. TOTALS

500 METER LEVEL WINDS AFTERNOON

MAY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECOND TO	GREATER THAN	TOTAL COUNT	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N						7.6		2	2	15.2	8.0
NNE						7.6		0	0	0.0	14.4
NNE						7.6		0	0	0.0	5.6
E						7.6		1	1	7.6	11.2
ESE						7.6		0	0	0.0	10.3
SSE			7.6			7.6		2	2	15.2	6.4
S			7.6			7.6		1	1	7.6	26.0
SSW						7.6		1	1	7.6	5.0
WSW						7.6		1	1	7.6	6.4
WNW						7.6		0	0	0.0	
NNW			7.6			7.6		1	1	7.6	10.0
CALM								0	0	0.0	
COL. TOTALS	30.4	30.4	22.8	7.6				13			

COL. TOTALS

## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER &amp; CONTIN MET

300 METER LEVEL WINDS MORNING

MAY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECOND TO	GREATER THAN	TOTAL COUNT	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N						9.0		1	1	9.0	12.7
NNE						9.0		0	0	0.0	13.2
NNE						9.0		1	1	9.0	20.3
E						9.0		1	1	9.0	6.5
ESE			9.0			9.0		1	1	9.0	22.5
SSE			9.0			9.0		3	3	27.1	6.6
S			18.1			9.0		1	1	9.0	13.1
SSW						9.0		0	0	0.0	
WSW						9.0		0	0	0.0	
WNW						9.0		1	1	9.0	9.0
NNW						9.0		1	1	9.0	17.1
CALM								0	0	0.0	
COL. TOTALS	9.0	36.1	27.0					11			12.2

COL. TOTALS

300 METER LEVEL WINDS AFTERNOON

MAY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECOND TO	GREATER THAN	TOTAL COUNT	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N						7.6		3	3	22.9	10.9
NNE						7.6		1	1	7.6	17.3
NNE						7.6		0	0	0.0	
E						7.6		1	1	7.6	3.7
ESE						7.6		0	0	0.0	
SSE			7.6			7.6		2	2	15.2	6.8
S			7.6			7.6		1	1	7.6	13.0
SSW						7.6		1	1	7.6	6.0
WSW						7.6		1	1	7.6	6.3
WNW						7.6		1	1	7.6	28.6
NNW			7.6			7.6		1	1	7.6	3.7
CALM								0	0	0.0	7.2
COL. TOTALS	30.4	30.4	22.9	7.6				13			10.1

COL. TOTALS

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			10.0				1	10.0	8.9
NNE				10.0			1	10.0	19.5
ENE							1	0.0	
E			10.0				1	0.0	
ESE							1	0.0	6.2
SEE			10.0				1	0.0	
SSE				10.0			2	20.0	14.9
S							1	10.0	23.0
SSW	10.0						1	10.0	5.2
WSW	10.0						1	10.0	5.7
W	10.0						1	10.0	4.5
WNW				10.0			1	10.0	12.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	30.0	30.0	10.0	30.0			10		11.5

750 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N			9.0				1	9.0	6.7
NNE				9.0			1	9.0	19.7
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	3.9
SEE							0	0.0	
SSE							1	10.0	5.5
S							1	0.0	9.0
SSW							1	0.0	5.9
WSW							1	0.0	7.6
W							1	0.0	20.9
WNW							1	0.0	7.0
NNW							1	0.0	7.6
CALM							0	0.0	
COL. TOTALS	36.1	45.0		18.0			11		9.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							1	12.5	16.7
E							0	0.0	
ESE							0	0.0	
SEE							1	12.5	5.9
SSE							1	12.5	
S							1	12.5	11.8
SSW							1	12.5	19.3
WSW							0	0.0	
W							0	0.0	
WNW							2	25.0	6.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	37.5	25.0	25.0			8		11.1

1000 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	9.0	8.3
NNE							1	9.0	22.5
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	5.8
SEE							1	9.0	
SSE							0	0.0	8.0
S							2	18.1	8.8
SSW							1	9.0	
WSW							0	0.0	
W							0	0.0	
WNW							2	18.0	15.0
NNW							1	9.0	8.7
CALM							0	0.0	
COL. TOTALS	18.0	63.1		18.0			11		10.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO -- SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0.0	17.6
NNE	1	12.5	0	0	0	0	0	1	12.5	0.0
NNE	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
SES	2	25.0	0	0	0	0	0	2	25.0	12.9
SSW	1	12.5	0	0	0	0	0	1	12.5	17.0
SSW	3	37.5	0	0	0	0	0	3	37.5	12.3
WSW	1	12.5	0	0	0	0	0	1	12.5	11.7
WNW	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0.0	0.0
CALM	0	0.0	0	0	0	0	0	0	0.0	0.0
COL. TOTALS			12.5	50.0	37.5			8		13.6

2000 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0.0	9.2
NNE	1	16.6	0	0	0	0	0	1	16.6	0.0
NNE	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
SES	1	16.6	0	0	0	0	0	1	16.6	6.9
SSW	1	16.6	0	0	0	0	0	1	16.6	15.6
SSW	1	16.6	0	0	0	0	0	1	16.6	4.0
WSW	1	16.6	0	0	0	0	0	1	16.6	14.3
WNW	0	0	0	0	0	0	0	0	0.0	0.0
NNW	1	16.6	0	0	0	0	0	1	16.6	10.1
NNW	0	0	0	0	0	0	0	0	0.0	0.0
CALM	0	0.0	0	0	0	0	0	0	0.0	0.0
COL. TOTALS		16.6	33.2	49.8				6		10.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO -- SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING MAY,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0.0	18.3
NNE	1	12.5	0	0	0	0	0	1	12.5	0.0
NNE	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
SES	2	25.0	0	0	0	0	0	2	25.0	8.0
SSW	1	12.5	0	0	0	0	0	1	12.5	23.1
SSW	1	12.5	0	0	0	0	0	1	12.5	5.5
WSW	1	12.5	0	0	0	0	0	1	12.5	11.2
WNW	0	0	0	0	0	0	0	0	0.0	0.0
NNW	0	0	0	0	0	0	0	0	0.0	0.0
CALM	0	0.0	0	0	0	0	0	0	0.0	0.0
COL. TOTALS			12.5	50.0	12.5	25.0		8		11.5

1500 METER LEVEL WINDS AFTERNOON MAY,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0.0	13.3
NNE	2	25.0	0	0	0	0	0	2	25.0	0.0
NNE	0	0	0	0	0	0	0	0	0.0	0.0
ENE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
ESE	0	0	0	0	0	0	0	0	0.0	0.0
SES	1	9.0	0	0	0	0	0	1	9.0	4.2
SSW	1	9.0	0	0	0	0	0	1	9.0	12.6
SSW	1	9.0	0	0	0	0	0	1	9.0	7.7
WSW	1	9.0	0	0	0	0	0	1	9.0	10.0
WNW	2	9.0	0	0	0	0	0	2	18.0	12.1
NNW	1	9.0	0	0	0	0	0	1	9.0	16.1
NNW	1	9.0	0	0	0	0	0	1	9.0	9.4
NNW	1	9.0	0	0	0	0	0	1	9.0	10.3
CALM	0	0.0	0	0	0	0	0	0	0.0	0.0
COL. TOTALS		18.0	27.0	27.0	27.0	27.0		11		11.0



### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING

8261 AYH

DIRECTION	00:1 TO 02:9	WIND TO 05:9	NET TO 09:9	TENS/SEC TO 15:9	GREATER TO 25:0	RUM TOTAL COUNT	PRIMARY TOTAL PERCENT	AVERAGE SPEED
N						0	0	0.0
NNE						0	0	0.0
ENE						0	0	0.0
E						0	0	0.0
ESE						0	0	0.0
SSE						0	0	0.0
SSW						0	0	0.0
WSW						0	0	0.0
W						0	0	0.0
WNW						0	0	0.0
NNW						0	0	0.0
CALM						0	0	0.0
TOTALS						0	0	0.0

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON

MAY 9 1978

DIRECTION	00.1	02.9	05.9	08.9	10.0	12.0	15.9	19.0	NETERS/SECOND	SECTOR	TOTAL COUNT	PERCENT	SUMMARY AVERAGE
N											0	0.0	
NE											0	0.0	
E											0	0.0	
SE											0	0.0	
S											0	0.0	
SW								50.0			1	50.0	20.1
WS											0	0.0	
WNW											1	50.0	14.7
NW											0	0.0	
NNW											0	0.0	
CALM											0	0.0	
TOTALS								50.0			2		17.4

L. TOTALS

FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL, BUBBLER & CONTIN MET

MONTH OF MAY 1978 MORNING

**MORNING**

**MORNING**

[illegible]INVERSION  
TYPE

1	2.9	5.8	2.9	8.8	2.9
2	11.7	5.8	11.7	2.9	
3	5.8	5.8		2.9	
4	2.9	2.9	2.9		
5					5.8

MONTH OF

8261 ÅV81

AFTERNOON

[illegible]INVERSION  
TYPE

1	3.9	3.9
2	3.9	1.9
3	1.9	7.8
4	1.9	1.9
5		5.8

TOTAL N

TOTAL N

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

JUNE, 1978

DIRECTION	WIND SPEEDS METERS/SECOND				*****				*****			
	00.1	03.0	06.0	10.0	15.0	20.0	25.0	GREATER	10.0	15.0	20.0	25.0
N	00.1	03.0	06.0	10.0	15.0	20.0	25.0	GREATER	10.0	15.0	20.0	25.0
NNE	02.9	05.9	09.9	15.9	25.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNE	7.6					0.0	0.0	0.0	0.0	0.0	0.0	0.0
ENE						0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	7.6					0.0	0.0	0.0	0.0	0.0	0.0	0.0
ESE	7.6					0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	15.3					0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSE	23.0					0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW						0.0	0.0	0.0	0.0	0.0	0.0	0.0
SSW						0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW						0.0	0.0	0.0	0.0	0.0	0.0	0.0
WSW						0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW	15.3	7.6				0.0	0.0	0.0	0.0	0.0	0.0	0.0
NNW						0.0	0.0	0.0	0.0	0.0	0.0	0.0
CALM						0.0	0.0	0.0	0.0	0.0	0.0	0.0
COL. TOTALS	76.4	7.6	7.6			1	7.0	2.3				

JUNE, 1978

DIRECTION	00.1 10 02.9	03.0 10 05.9	06.0 10 09.9	10.0 10 15.9	15.0 25.0	METERS/SECOND GREATER THAN 25.0	TOTAL COUNT	PERCENT	SUMMARY TOTAL AVERAGE SPEED
N							0	0.0	0.0
NNE							0	0.0	0.0
NNE							0	0.0	0.0
ENE							0	0.0	0.0
ESE	7.6	7.6					1	7.0	7.0
SSE	7.6						1	7.0	7.0
SSE	7.6	15.3					2	15.3	15.3
SSW	7.6	15.3					2	15.3	15.3
WSW							1	7.6	7.6
NNW	7.6	7.6	7.6				2	15.3	15.3
NNW							1	7.6	7.6
CALM							0	0.0	0.0
COL. TOTALS	30.4	45.8	22.8				13		4.5

# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MAY 1978

MIXING HEIGHT (METERS)	MORNING OCCURRENCES		AFTERNOON OCCURRENCES	
	0-100	101-250	251-500	501-1000
0-100	2	4	3	1
101-250				
251-500				
501-750				
751-1000				
1001-1500				
>1500				
TOTAL	12	12	9.4	
AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)	8.3			
AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C/100M)	-00.73			-01.55

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL-BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING									
JUNE, 1978									
DIRECTION	00.1	02.0	06.0	10.0	15.0	25.0	GREATER THAN 25.0	TOTAL COUNT	AVERAGE SPEED
N			7.6					2	6.1
NNE								0	
NNEE								0	
E								0	
EENE								0	
ESE								0	
ESEE								0	
SSE			7.6					1	5.0
SSEES								0	
SS			7.6					1	6.1
SSS								1	12.4
SSM								1	5.5
SSW								3	7.0
WS								2	3.8
WSW								1	7.6
WN								0	
WNW								1	7.4
NN								1	7.7
NNW								0	
CALM								0	
COL. TOTALS	15.2	22.8	45.7	15.2				13	6.5

100 METER LEVEL WINDS AFTERNOON

JUNE, 1978									
DIRECTION	00.1	02.0	06.0	10.0	15.0	25.0	GREATER THAN 25.0	TOTAL COUNT	AVERAGE SPEED
N								0	
NNE								0	
NNEE								0	
E								0	
EENE								0	
ESE								0	
ESEE								0	
SSE								1	4.3
SS								1	2.9
SSS								1	6.9
SSM								2	4.4
SSW								4	7.8
WS								1	3.3
WSW								2	10.1
WN								1	
WNW								0	
NN								0	
NNW								0	
CALM								0	
COL. TOTALS	38.1	30.4	22.8	7.6				13	4.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL-BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING									
JUNE, 1978									
DIRECTION	00.1	02.0	06.0	10.0	15.0	25.0	GREATER THAN 25.0	TOTAL COUNT	AVERAGE SPEED
N			7.6					1	6.5
NNE								1	12.5
NNEE								0	
E								0	
EENE								0	
ESE								0	
ESEE								0	
SSE								0	
SSEES								0	
SS								1	9.7
SSS								0	
SSM								2	11.3
SSW								1	10.3
WS								1	17.1
WSW								3	18.5
WN								0	
WNW								1	3.3
NN								2	11.2
NNW								0	
CALM								0	
COL. TOTALS	7.6	7.6	38.0	30.4	15.2			13	10.0

200 METER LEVEL WINDS AFTERNOON

JUNE, 1978									
DIRECTION	00.1	02.0	06.0	10.0	15.0	25.0	GREATER THAN 25.0	TOTAL COUNT	AVERAGE SPEED
N								0	
NNE								0	
NNEE								0	
E								0	
EENE								0	
ESE								0	
ESEE								0	
SSE								0	
SS								1	7.3
SSS								2	11.9
SSM								3	15.4
SSW								3	15.8
WS								1	4.8
WSW								1	8.8
WN								0	
WNW								1	6.0
NN								0	
NNW								0	
CALM								0	
COL. TOTALS	22.8	38.1	22.8	15.2				13	6.0



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

500 METER LEVEL WINDS MORNING

JUNE,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL COUNT	AVERAGE SPEED
N					7.6			1	7.6	10.4
NNE								1	0.0	
NNE					7.6			1	7.6	17.7
EENE								1	0.0	
EENE								1	0.0	
ESE								1	0.0	
ESE								1	0.0	
SSES								1	0.0	6.4
SSM			7.6					1	7.6	
SSM			7.6					2	15.2	16.5
WSM			7.6					3	22.9	16.5
WSM								1	7.6	10.4
NNW								1	0.0	6.8
NNW								2	15.3	12.1
CALM								0	0.0	
COL. TOTALS	15.3	15.2	38.1	30.4				13		12.5

500 METER LEVEL WINDS AFTERNOON

JUNE,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL COUNT	AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
NNE								0	0.0	
EENE								0	0.0	
EENE								0	0.0	
SSES								2	15.2	1.7
SSM								1	7.6	3.6
SSM								1	7.6	4.1
WSM								1	7.6	7.9
WSM								1	7.6	10.2
NNW								1	7.6	4.4
NNW								2	15.2	9.8
CALM								0	0.0	
COL. TOTALS	38.1	30.4	15.2	15.2				13		5.4

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

300 METER LEVEL WINDS MORNING

JUNE,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL COUNT	AVERAGE SPEED
N					7.6			1	7.6	8.0
NNE					7.6			1	7.6	15.9
NNE								0	0.0	
EENE								0	0.0	
EENE								0	0.0	
SSES								1	0.0	6.9
SSM								2	15.2	14.7
SSM								1	7.6	21.3
WSM								1	7.6	15.4
WSM								1	7.6	15.5
NNW								1	7.6	4.7
NNW								2	15.3	11.7
CALM								0	0.0	
COL. TOTALS	15.2	22.8	38.1	22.8				13		11.7

300 METER LEVEL WINDS AFTERNOON

JUNE,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL COUNT	AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
NNE								0	0.0	
EENE								1	7.6	.7
EENE								0	0.0	
SSES								1	7.6	2.3
SSM								1	7.6	1.6
SSM								2	15.2	4.6
WSM								1	7.6	7.6
WSM								2	15.2	6.4
NNW								1	7.6	3.7
NNW								2	15.2	6.8
CALM								0	0.0	
COL. TOTALS	30.4	38.1	15.2	15.2				13		5.1

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL.BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING

JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL PERCENT AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
ENE					8.3		1	1	45.9
E							0	0	0.0
ESE							0	0	0.0
SE							0	0	0.0
SSE							0	0	0.0
SSW							0	0	0.0
WSW							1	1	8.3
W	8.3	8.3	8.3	8.3			2	2	15.9
WNW	8.3	8.3	8.3				2	2	15.9
NNW							1	1	8.3
CALM							0	0	0.0
COL. TOTALS	24.9	24.9	24.9	16.6	8.3		12	12	13.3

750 METER LEVEL WINDS AFTERNOON

JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL PERCENT AVERAGE SPEED
N							2	2	2.2
NNE							0	0	0.0
ENE							0	0	0.0
E							0	0	0.0
ESE							0	0	0.0
SE							1	1	1.1
SSE							1	1	1.1
SSW							1	1	1.1
WSW							1	1	1.1
W							2	2	2.2
WNW							2	2	2.2
NNW							1	1	1.1
CALM							0	0	0.0
COL. TOTALS	30.4	38.0	7.6	7.6	15.2		13	13	6.6

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL.BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING

JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL PERCENT AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
ENE							0	0	0.0
E							0	0	0.0
ESE							0	0	0.0
SE							0	0	0.0
SSE							0	0	0.0
SSW							1	1	6.3
WSW							0	0	0.0
W							0	0	0.0
WNW							4	4	13.6
NNW							1	1	8.1
CALM							1	1	15.1
COL. TOTALS	18.1	18.1	9.0	9.0	27.1		11	11	10.3

1000 METER LEVEL WINDS AFTERNOON

JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL PERCENT AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
ENE							1	1	1.1
E							0	0	0.0
ESE							0	0	0.0
SE							1	1	2.2
SSE							1	1	2.2
SSW							1	1	2.2
WSW							3	3	5.6
W							1	1	1.1
WNW							2	2	3.3
NNW							1	1	1.1
CALM							0	0	0.0
COL. TOTALS	24.9	16.6	33.2	8.3	16.6		12	12	8.6

## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER &amp; CONTIN MET

2000 METER LEVEL WINDS MORNING JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND TO GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE			11.1				1	11.1	8.4
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			11.1				1	11.1	6.2
SSW							0	0.0	
WSW				11.1			1	11.1	17.3
W			11.1	11.1			2	22.2	12.9
WNW		11.1	11.1	11.1			3	33.3	1.1
NW							0	0.0	
NNW	11.1						1	11.1	1.1
CALM							0	0.0	
COL. TOTALS	11.1	11.1	44.4	11.1	22.2		9		9.4

2000 METER LEVEL WINDS AFTERNOON JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND TO GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
WSW				22.2	11.1		3	33.3	9.3
W				11.1	11.1		2	22.2	15.1
WNW				11.1			3	33.3	5.8
NW							0	0.0	
NNW				11.1			1	11.1	11.8
CALM							0	0.0	
COL. TOTALS	22.2	11.1		55.5	11.1		9		9.7

## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER &amp; CONTIN MET

1500 METER LEVEL WINDS MORNING JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND TO GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S			10.0				1	10.0	5.0
SSW							0	0.0	
WSW				10.0			1	10.0	17.0
W			10.0	10.0			2	20.0	9.3
WNW			10.0	10.0			2	20.0	9.5
NW							0	0.0	
NNW			10.0		10.0		2	20.0	15.4
CALM							0	0.0	
COL. TOTALS			30.0	40.0	20.0		10		10.5

1500 METER LEVEL WINDS AFTERNOON JUNE, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND TO GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
WSW				10.0	20.0		1	10.0	5.4
W				10.0			1	10.0	17.0
WNW				10.0			1	10.0	2.3
NW							0	0.0	
NNW				10.0			1	10.0	4.8
CALM							0	0.0	
COL. TOTALS	20.0	30.0	20.0	20.0	10.0		10		8.0





# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL.BU8BLER & CCNTIN MET

SURFACE WINDS MORNING JULY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 04.9	05.0 TO 06.9	07.0 TO 08.9	09.0 TO 10.9	11.0 TO 12.9	13.0 TO 14.9	15.0 TO 16.9	17.0 TO 18.9	19.0 TO 20.9	21.0 TO 22.9	23.0 TO 24.9	25.0 TO 26.9	27.0 TO 28.9	29.0 TO 30.0
N															
NNE															
NNE															
ENE															
ESE															
ESE															
SSE															
SSE															
SSW															
SSW															
WSW															
WSW															
NNW															
NNW															
CALM															

COL. TOTALS 45.8 30.5 7.6

SURFACE WINDS AFTERNOON JULY, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 04.9	05.0 TO 06.9	07.0 TO 08.9	09.0 TO 10.9	11.0 TO 12.9	13.0 TO 14.9	15.0 TO 16.9	17.0 TO 18.9	19.0 TO 20.9	21.0 TO 22.9	23.0 TO 24.9	25.0 TO 26.9	27.0 TO 28.9	29.0 TO 30.0
N															
NNE															
NNE															
ENE															
ESE															
ESE															
SSE															
SSE															
SSW															
SSW															
WSW															
WSW															
NNW															
NNW															
CALM															

COL. TOTALS 41.5 8.3 41.5 8.3

# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL.BU8BLER & CCNTIN MET

MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR JUNE 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	2	0
251- 500	0	0
501- 750	0	1
751-1000	0	0
1001-1500	0	1
>1500	0	1
TOTAL	4	3

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC) 5.5 7.7

AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M) -00.87 -01.86

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING									
JULY, 1978									
DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	***** METERS/SECOND GREATER THAN	***** ROW TOTAL	***** AVERAGE SPEED
N	7.6							1	3.2
NNE								1	2.6
NNE								0	
ENE								0	
ENE								0	
ESE								0	
ESE	15.3		7.6	7.6				4	5.5
SSE								0	
SSE								0	
SSW		7.6						1	3.8
SSW								0	
WSW								1	7.3
WSW								0	
WNW	7.6							3	9.3
WNW								1	4.9
NNW								1	6.3
NNW								0	
CALM								0	0.0
COL. TOTALS	30.5	22.8	30.4	7.6	7.6			13	6.0
100 METER LEVEL WINDS AFTERNOON									
JULY, 1978									
DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	***** METERS/SECOND GREATER THAN	***** ROW TOTAL	***** AVERAGE SPEED
N								1	4.6
NNE								0	
NNE								0	
ENE								0	
ENE								0	
ESE								0	
ESE	8.3							2	6.1
SSE								0	
SSE								0	
SSW								1	13.1
SSW								0	
WSW								1	21.5
WSW								3	6.0
WNW	16.6							1	9.5
WNW								1	7.1
NNW								0	
NNW								0	
CALM								0	0.0
COL. TOTALS	24.9	24.9	16.6	24.9	8.3			12	8.3

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING									
JULY, 1978									
DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	***** METERS/SECOND GREATER THAN	***** ROW TOTAL	***** AVERAGE SPEED
N								2	7.8
NNE								0	
NNE								0	
ENE								1	7.1
ENE								0	
ESE								1	15.7
ESE								2	8.2
SSE								0	
SSE								0	
SSW								0	
SSW								0	
WSW								3	4.7
WSW								1	17.9
WNW								1	1.8
WNW								2	8.4
NNW								0	
NNW								0	
CALM								0	0.0
COL. TOTALS	7.6	15.2	53.4	22.8				13	8.4
200 METER LEVEL WINDS AFTERNOON									
JULY, 1978									
DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	***** METERS/SECOND GREATER THAN	***** ROW TOTAL	***** AVERAGE SPEED
N								1	6.9
NNE								0	
NNE								0	
ENE								0	
ENE								0	
ESE								0	
ESE								0	
SSE								1	10.5
SSE								1	7.9
SSW								1	3.2
SSW								1	39.6
WSW								1	10.2
WSW								2	19.2
WNW								3	5.2
WNW								0	
NNW								0	
NNW								0	
CALM								0	0.0
COL. TOTALS	41.5	24.9	16.6	8.3	8.3			12	9.9



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

500 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	AVERAGE SPEED
N	7.6	7.6	7.6						15.2	2	6.9
NNE									15.2	2	4.8
ENE									0.0	0	
E									0.0	0	
ESE									0.0	0	
SE				7.6			7.6		7.6	1	12.5
SESE				7.6			7.6		7.6	1	14.9
SSE				7.6			7.6		7.6	1	2.4
SSW									0.0	0	
WSW									0.0	0	
W									0.0	0	
WNW									22.8	3	14.3
NW									7.6	1	21.6
NNW									7.6	1	5.4
CALM									0.0	0	
COL. TOTALS	15.2	15.2	30.4	22.8	15.2					13	10.0

500 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	AVERAGE SPEED
N									8.3	1	23.0
NNE									0.0	0	
ENE									0.0	0	
E									0.0	0	
ESE									0.0	0	
SE									8.3	1	7.4
SESE									8.3	1	3.1
SSE									8.3	1	8.0
SSW									0.0	0	
WSW									0.0	0	
W									0.0	0	
WNW									16.6	2	10.9
NW									24.9	3	15.3
NNW									16.6	2	10.2
CALM									8.3	1	12.5
COL. TOTALS	16.6	16.6	33.2	16.6	16.6					12	9.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

300 METER LEVEL WINDS MORNING JULY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	AVERAGE SPEED
N									22.9	3	8.3
NNE									0.0	0	
ENE									7.6	1	9.6
E									0.0	0	
ESE									0.0	0	
SE									0.0	0	
SESE									15.2	1	12.4
SSE									0.0	0	
SSW									0.0	0	
WSW									0.0	0	
W									0.0	0	
WNW									15.2	2	14.5
NW									7.6	1	19.5
NNW									7.6	1	7.0
CALM									0.0	0	
COL. TOTALS	7.6	45.7	30.4	15.2						13	10.4

300 METER LEVEL WINDS AFTERNOON JULY,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	METERS/SECOND TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	AVERAGE SPEED
N									16.6	2	5.8
NNE									0.0	0	
ENE									0.0	0	
E									0.0	0	
ESE									0.0	0	
SE									0.0	0	
SESE									8.3	1	3.8
SSE									8.3	1	6.0
SSW									0.0	0	
WSW									0.0	0	
W									0.0	0	
WNW									16.6	2	11.1
NW									16.6	2	11.3
NNW									8.3	1	7.9
CALM									0.0	0	
COL. TOTALS	16.6	24.9	41.5	8.3	8.3					12	7.1

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING

JULY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
-----------	--------------	--------------	--------------	--------------	--------------	-------------------	------------------------------------	-----------------------	-------------------------	-----------------------------	---------------------------

N	8.3						1	1	8.3	7.2
NNE							0	0	0.0	
ENE							0	0	0.0	
E							0	0	0.0	
ESE							0	0	0.0	
SE	8.3						1	1	8.3	17.4
SSE							0	0	0.0	
SSW							0	0	0.0	
WSW							0	0	0.0	
W							1	1	8.3	4.8
WSW							2	2	16.6	15.2
WNW							1	1	8.3	15.2
NW							2	2	16.6	30.7
NNW							2	2	16.6	8.2
CALM							0	0	0.0	

COL. TOTALS 8.3 24.9 33.2 8.3 16.6 8.3 12 10.2

1000 METER LEVEL WINDS AFTERNOON

JULY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
-----------	--------------	--------------	--------------	--------------	--------------	-------------------	------------------------------------	-----------------------	-------------------------	-----------------------------	---------------------------

N	9.0						1	1	9.0	24.2
NNE							0	0	0.0	
ENE							0	0	0.0	
E							0	0	0.0	
ESE							0	0	0.0	
SE	9.0						1	1	9.0	3.2
SSE							3	3	27.0	5.6
SSW							0	0	0.0	
WSW							1	1	9.0	12.8
W							1	1	9.0	5.8
WSW							2	2	18.0	13.8
WNW							1	1	9.0	10.1
NW							0	0	0.0	
NNW							0	0	0.0	
CALM							0	0	0.0	

COL. TOTALS 45.1 9.0 18.0 18.0 9.0 9.0 11 11.9

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING

JULY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
-----------	--------------	--------------	--------------	--------------	--------------	-------------------	------------------------------------	-----------------------	-------------------------	-----------------------------	---------------------------

N	8.3						0	0	0.0	5.6
NNE							1	1	8.3	
ENE							0	0	0.0	
E							0	0	0.0	
ESE							0	0	0.0	
SE	8.3						1	1	8.3	13.7
SSE							2	2	16.6	16.8
SSW							0	0	0.0	
WSW							0	0	0.0	
W							0	0	0.0	
WSW							1	1	8.3	8.0
WNW							1	1	8.3	8.5
NW							2	2	16.6	17.1
NNW							2	2	16.6	6.2
CALM							0	0	0.0	

COL. TOTALS 8.3 33.2 24.9 16.6 8.3 8.3 12 9.5

750 METER LEVEL WINDS AFTERNOON

JULY,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** SUMMARY PERCENT	***** AVERAGE SPEED
-----------	--------------	--------------	--------------	--------------	--------------	-------------------	------------------------------------	-----------------------	-------------------------	-----------------------------	---------------------------

N	8.3						1	1	8.3	4.2
NNE							0	0	0.0	
ENE							0	0	0.0	
E							0	0	0.0	
ESE							0	0	0.0	
SE	16.6						2	2	16.6	4.6
SSE							0	0	0.0	
SSW							1	1	8.3	9.9
WSW							0	0	0.0	
W							1	1	8.3	2.0
WSW							2	2	16.6	12.8
WNW							2	2	16.6	11.4
NW							2	2	16.6	16.8
NNW							1	1	8.3	
CALM							0	0	0.0	

COL. TOTALS 16.6 33.2 16.6 8.3 24.9 8.3 12 8.8

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL, BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING

DIRECTION	00.1 TO 02.9	00.0 TO 02.9	WIND SPEEDS 00.0 TO 02.9	06.0 TO 09.9	10.0 TO 15.9	METERS/SECOND 10.0 TO 25.0	GREATER THAN 25.0	KOH TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
NNE								00	00	
ENE								00	00	
ESE								00	00	
SS								00	00	
SSW								00	00	
WSW								00	00	
WNW								00	00	
NNW								00	00	
CALM								00	00	

101

COL. TOTALS

33.2

1500 METER LEVEL WINDS AFTERNOON JULY 1978

[illegible]

101

COL. TOTALS

20-0 10-0

12.5

COL. TOTALS

2.0 40.0





FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR JULY 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	5	0
101- 250	2	0
251- 500	3	1
501- 750	1	2
751-1000	0	2
1001-1500	0	5
>1500	0	1
TOTAL	11	11

AVERAGE WIND SPEED  
THROUGH MIXED  
LAYER (M/SEC) 6.2

AVERAGE LAPSE RATE  
BELOW FIRST INVER. -01.74  
(DEG C /100M)

-01.23

10.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING AUGUST, 1978

DIRECTION	***** WIND SPEEDS METERS/SECOND *****	***** ROW TOTAL COUNT *****	***** SUMMARY TOTAL PERCENT *****	***** AVERAGE SPEED *****
N	00.1 03.0 06.0 10.0 16.0 TO GREATER THAN 25.0	2	16.6	1.4
NNE	16.6	1	8.3	1.8
ENE	8.3	1	8.3	1.4
ESE	8.3	1	8.3	1.4
SSE	8.3	1	8.3	1.4
SSW	25.0	3	25.0	1.9
WSW	8.3	0	0.0	1.2
WNW	8.3	0	0.0	2.7
NNW	8.3	1	8.3	3.2
CALM	8.3	1	8.3	3.2
COL. TOTALS	83.1	12	8.0	1.5

SURFACE WINDS AFTERNOON AUGUST, 1978

DIRECTION	***** WIND SPEEDS METERS/SECOND *****	***** ROW TOTAL COUNT *****	***** SUMMARY TOTAL PERCENT *****	***** AVERAGE SPEED *****
N	00.1 03.0 06.0 10.0 16.0 TO GREATER THAN 25.0	1	7.6	-5
NNE	7.6	0	0.0	13.6
ENE	7.6	1	7.6	
ESE	7.6	0	0.0	
SSE	7.6	0	0.0	
SSW	7.6	0	0.0	
WSW	7.6	0	0.0	
WNW	7.6	0	0.0	
NNW	7.6	0	0.0	
CALM	7.6	0	0.0	
COL. TOTALS	15.2	13	0.0	6.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING AUGUST, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROM TOTAL	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0	0.0	4.4
NNE		8.3					1	1	8.3	
ENE							0	0	0.0	
E							0	0	0.0	
ESE			8.3				1	1	8.3	12.4
SSE			8.3				1	1	8.3	10.0
S							1	1	8.3	5.6
SSW							1	1	8.3	8.5
WSW	8.3		8.3				2	2	16.6	6.8
W							1	1	8.3	10.2
WNW			8.3		8.3		2	2	16.6	15.5
NNW							2	2	16.6	10.3
CALM							0	0	0.0	

COL. TOTALS 8.3 16.6 16.6 49.8 8.3 9.7

200 METER LEVEL WINDS AFTERNOON AUGUST, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROM TOTAL	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0	0.0	
NNE							0	0	0.0	
ENE							1	1	7.6	19.0
E							0	0	0.0	
ESE							0	0	0.0	
SSE			7.6				1	1	7.6	3.0
S							0	0	0.0	
SSW							0	0	0.0	
WSW			7.6	7.6			2	2	15.2	9.5
W	7.6	7.6	7.6	7.6			4	4	30.4	7.2
WNW	7.6	7.6	7.6	15.3			3	3	22.8	3.9
NNW							2	2	15.3	12.7
CALM							0	0	0.0	

COL. TOTALS 15.2 22.8 22.8 30.5 7.6 8.2

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING AUGUST, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROM TOTAL	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	1	8.3	4.7
NNE		8.3					1	1	8.3	
ENE							0	0	0.0	
E							0	0	0.0	
ESE			8.3				1	1	8.3	9.5
SSE	8.3		8.3				2	2	16.6	2.9
S							1	1	8.3	6.6
SSW			8.3				1	1	8.3	8.7
WSW							1	1	8.3	5.8
W			16.6				2	2	16.6	3.8
WNW			8.3				1	1	8.3	6.9
NNW			16.6				2	2	16.6	9.4
CALM							0	0	0.0	6.4

COL. TOTALS 8.3 33.2 58.1

100 METER LEVEL WINDS AFTERNOON AUGUST, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	TOTAL COUNT	ROM TOTAL	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0	0.0	
NNE							0	0	0.0	
ENE							1	1	7.6	11.0
E							0	0	0.0	
ESE							0	0	0.0	
SSE							0	0	0.0	
S							0	0	0.0	
SSW	7.6						1	1	7.6	2.2
WSW			7.6				1	1	7.6	6.2
W			7.6	7.6			2	2	15.2	4.7
WNW	7.6	15.3	7.6	7.6			3	3	22.8	8.1
NNW		15.3	15.3	15.3			3	3	22.8	8.1
CALM							0	0	0.0	

COL. TOTALS 15.2 38.2 30.5 15.2 6.5



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

300 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** TOTAL COUNT	***** AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
NENE							0	0	0.0
EENE							0	0	0.0
ESE			9.0				1	1	14.0
ESE							0	0	0.0
SSE			9.0				2	2	11.3
SSW							0	0	0.0
SSW			9.0				2	2	11.1
WSW							0	0	0.0
WSW			9.0				1	1	12.6
WNW	9.0		9.0				1	1	13.3
NNW			9.0				2	2	17.2
NNW			18.1				2	2	13.0
CALM							0	0	0.0
COL. TOTALS	9.0	18.0	63.1	9.0			11		12.3

300 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** TOTAL COUNT	***** AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
NENE							1	1	18.3
EENE							0	0	0.0
ESE							0	0	0.0
SSE	7.6						1	1	2.2
SSW							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
WSW			7.6	7.6			2	2	15.8
WNW		7.6	15.3	7.6			4	4	9.2
NNW		23.0	7.6	7.6			4	4	7.0
NNW							1	1	11.7
CALM							0	0	0.0
COL. TOTALS	7.6	30.6	15.3	30.4	15.2		13		9.9

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

500 METER LEVEL WINDS MORNING AUGUST,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** TOTAL COUNT	***** AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
NENE							0	0	0.0
EENE							0	0	0.0
ESE							0	0	0.0
SSE			11.1	11.1			2	2	22.2
SSW							0	0	0.0
SSW			11.1				2	2	11.8
WSW							0	0	0.0
WSW				11.1			2	2	12.0
WNW				11.1			2	2	17.3
NNW			11.1	11.1			1	1	9.2
NNW			11.1	22.2			2	2	22.2
CALM							0	0	0.0
COL. TOTALS		11.1	22.2	44.4	22.2		9		12.0

500 METER LEVEL WINDS AFTERNOON AUGUST,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** TOTAL COUNT	***** AVERAGE SPEED
N							0	0	0.0
NNE							0	0	0.0
NENE							0	0	0.0
EENE							1	1	12.7
ESE							0	0	0.0
SSE	7.6						1	1	2.2
SSW							0	0	0.0
SSW							0	0	0.0
WSW							0	0	0.0
WSW							0	0	0.0
WNW			7.6	15.3	7.6		2	2	14.7
NNW		7.6	15.3	7.6	7.6		4	4	11.3
NNW							1	1	15.4
CALM							0	0	0.0
COL. TOTALS	15.2	30.5	38.1	7.6	7.6		13		9.4



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL.8UBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING AUGUST, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
10 10 10 10 10 10  
02.9 05.9 09.9 15.9 25.0 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	TOTAL	ROW	SUMMARY
	10	10	10	10	10	10	COUNT	PERCENT	AVERAGE
N	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
SSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
NNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
NNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	

COL. TOTALS

22.2 11.1 55.5 11.1

1500 METER LEVEL WINDS AFTERNOON AUGUST, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
10 10 10 10 10 10  
02.9 05.9 09.9 15.9 25.0 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	TOTAL	ROW	SUMMARY
	10	10	10	10	10	10	COUNT	PERCENT	AVERAGE
N	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
SSW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
WSW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
WSW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
WNW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
WNW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
NNW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
NNW	8.3	8.3	8.3	8.3	8.3	8.3	1	8.3	8.3
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	

COL. TOTALS

41.5 24.9 16.6 8.3 8.3 8.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL.8UBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING AUGUST, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
10 10 10 10 10 10  
02.9 05.9 09.9 15.9 25.0 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	TOTAL	ROW	SUMMARY
	10	10	10	10	10	10	COUNT	PERCENT	AVERAGE
N	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
SSW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
WSW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
WSW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
WNW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
WNW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
NNW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
NNW	12.5	12.5	12.5	12.5	12.5	12.5	1	12.5	12.5
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	

COL. TOTALS

12.5 37.5 50.0

2000 METER LEVEL WINDS AFTERNOON AUGUST, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 25.0  
10 10 10 10 10 10  
02.9 05.9 09.9 15.9 25.0 25.0

DIRECTION	00.1	03.0	06.0	10.0	16.0	25.0	TOTAL	ROW	SUMMARY
	10	10	10	10	10	10	COUNT	PERCENT	AVERAGE
N	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
EENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	
SSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
SSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WSW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
WNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
NNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
NNW	11.1	11.1	11.1	11.1	11.1	11.1	1	11.1	11.1
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0.0	

COL. TOTALS

11.1 22.2 33.3 22.2 11.1





# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET  
MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR AUGUST 1978

MIXING HEIGHT (METERS) MORNING OCCURENCES AFTERNOON OCCURENCES

0- 100	9	0
101- 250	0	0
251- 500	3	1
501- 750	0	1
751-1000	0	3
1001-1500	0	1
>1500	0	7
TOTAL	12	13

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC) 5.1

10.1

AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M) -00.19

-01.65

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING SEPTEMBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER THAN TOTAL COUNT SUMMARY  
10 10 10 10 10 PERCENT TOTAL AVERAGE  
02.9 05.9 09.9 15.9 25.0 25.0

N	11.1	11.1	0.0	22.2	9.8
NNE			0.0	10.0	
ENE	11.1		1.0	11.1	2.3
ESE	22.2		1.0	10.0	
SSE	11.1		1.0	11.1	1.6
SSW			0.0	0.0	2.3
WSW			0.0	0.0	
WNW	11.1	11.1	0.0	0.0	
NNW			0.0	0.0	3.2
CALM			0.0	0.0	
COL. TOTALS	55.5	11.1	11.1	11.1	3.7

SURFACE WINDS AFTERNOON SEPTEMBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER THAN TOTAL COUNT SUMMARY  
10 10 10 10 10 PERCENT TOTAL AVERAGE  
02.9 05.9 09.9 15.9 25.0 25.0

N						0.0	0.0	0.0	0.0	6.4
NNE						0.0	0.0	0.0	0.0	
ENE						0.0	0.0	0.0	0.0	
ESE						0.0	0.0	0.0	0.0	
SSE	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	11.1	6.8
SSW						0.0	0.0	0.0	0.0	6.7
WSW						0.0	0.0	0.0	0.0	5.2
WNW						0.0	0.0	0.0	0.0	
NNW						0.0	0.0	0.0	0.0	12.0
CALM						0.0	0.0	0.0	0.0	4.3
COL. TOTALS	22.2	22.2	33.3	22.2	22.2	11.1	11.1	11.1	11.1	1.4
						0.0	0.0	0.0	0.0	6.4

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE			11.1	11.1			2	22.2	12.5
ENE		11.1					1	11.1	4.6
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE		11.1					2	22.2	7.9
S							0	0.0	
SSW					11.1		1	11.1	29.6
WSW							1	11.1	10.4
W							2	22.2	5.4
WNW			11.1	11.1			2	22.2	
NW							1	11.1	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3	22.2	33.3	11.1			9		11.2

200 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							1	11.1	12.2
SE							1	11.1	11.0
SSE							0	0.0	
S							1	11.1	4.0
SSW		11.1					1	11.1	15.7
WSW							3	33.3	19.2
W							0	0.0	
WNW			11.1	11.1			2	22.2	8.3
NW							1	11.1	4.4
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	22.2	33.3	11.1			9		9.2

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE			11.1	22.2			2	22.2	13.1
E							1	11.1	5.7
ESE							0	0.0	
SE							0	0.0	
SSE		22.2					2	22.2	4.3
S							0	0.0	
SSW				11.1			1	11.1	10.4
WSW							1	11.1	1.0
W							1	11.1	13.1
WNW				11.1			1	11.1	3.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	44.4	44.4				9		7.6

100 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN	ROW TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							1	11.1	10.4
SSE							1	11.1	.6
S							1	11.1	11.3
SSW		11.1					1	11.1	18.5
WSW					11.1		2	22.2	7.0
W							0	0.0	
WNW			11.1	11.1			2	22.2	6.8
NW							1	11.1	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	11.1	11.1	33.3	33.3	11.1		9		8.3



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

300 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** TOTAL COUNT	***** ROM COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
ESE	14.2							1	0	14.2	4.8
ESE								0	0	0.0	
SSE								0	0	0.0	
SSE								0	0	0.0	
SSW				14.2				1	1	14.2	15.4
SSW				14.2				1	0	14.2	10.5
SSW				14.2				1	0	14.2	15.0
WSW				14.2				1	0	14.2	15.0
WSW				14.2				1	0	14.2	9.6
WNW				14.2				1	0	14.2	6.4
WNW				14.2				1	0	14.2	6.4
NNW				14.2				1	0	14.2	6.4
NNW				14.2				1	0	14.2	6.4
CALM								0	0	0.0	
COL. TOTALS	28.4	14.2	56.8					7			10.2

300 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** TOTAL COUNT	***** ROM COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
ESE			11.1					1	0	11.1	6.7
ESE			11.1					1	0	11.1	9.8
SSE								0	0	0.0	
SSW								0	0	0.0	
SSW								0	0	0.0	
SSW								0	0	0.0	
WSW				22.2	11.1			1	1	11.1	3.3
WSW				22.2	11.1			1	1	11.1	16.0
WNW				11.1				1	1	11.1	1.5
WNW				11.1				1	1	11.1	2.2
NNW				11.1				1	1	11.1	8.6
NNW				11.1				1	1	11.1	8.6
CALM								0	0	0.0	
COL. TOTALS	22.2	11.1	33.3	22.2	11.1			9			8.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

500 METER LEVEL WINDS MORNING SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** TOTAL COUNT	***** ROM COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
ESE								0	0	0.0	
ESE								0	0	0.0	
SSE								0	0	0.0	
SSE								0	0	0.0	
SSW				25.0				1	0	25.0	13.7
SSW				25.0				1	0	25.0	13.7
SSW				25.0				1	0	25.0	13.7
WSW				25.0				1	0	25.0	14.3
WSW				25.0				1	0	25.0	14.3
WNW				25.0				2	0	50.0	9.9
WNW				25.0				2	0	50.0	9.9
NNW				25.0				0	0	0.0	
NNW				25.0				0	0	0.0	
CALM								0	0	0.0	
COL. TOTALS	25.0	75.0						4			11.9

500 METER LEVEL WINDS AFTERNOON SEPTEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** TOTAL COUNT	***** ROM COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N								0	0	0.0	
NNE								0	0	0.0	
NNE								0	0	0.0	
ENE								0	0	0.0	
ESE			14.2					1	0	14.2	8.2
ESE			14.2					1	0	14.2	8.2
SSE								0	0	0.0	
SSW								0	0	0.0	
SSW								0	0	0.0	
SSW								0	0	0.0	
WSW								0	0	0.0	
WSW								0	0	0.0	
WNW								0	0	0.0	
WNW								0	0	0.0	
NNW								0	0	0.0	
NNW								0	0	0.0	
CALM								0	0	0.0	
COL. TOTALS	14.2	28.4	14.2	14.2	28.4			7			10.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CCNTIN MET

1000 METER LEVEL WINDS MORNING SEPTEMBER, 1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
COL. TOTALS	50.0	50.0	50.0	50.0	50.0	50.0	4	4	10.3

1000 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
COL. TOTALS	28.4	28.4	28.4	28.4	14.2	14.2	7	7	10.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING SEPTEMBER, 1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
COL. TOTALS	25.0	25.0	25.0	50.0	50.0	50.0	4	4	9.4

750 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	GREATER THAN 25.0	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
MNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0	0	0	
COL. TOTALS	56.8	14.2	28.4	14.2	28.4	28.4	7	7	8.4

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING SEPTEMBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
ESSE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	1	25.0	25.0	25.0	25.0	5.4
WNW	3	75.0	25.0	25.0	25.0	14.4
NNW	0	0.0	0.0	0.0	0.0	0.0
NNW	0	0.0	0.0	0.0	0.0	0.0
CALM	0	0.0	0.0	0.0	0.0	0.0
COL. TOTALS	25.0	25.0	25.0	25.0	25.0	12.2

\*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
ESSE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	1	25.0	25.0	25.0	25.0	8.9
WNW	2	50.0	25.0	25.0	25.0	12.8
NNW	1	25.0	25.0	25.0	25.0	4.0
NNW	0	0.0	0.0	0.0	0.0	0.0
CALM	0	0.0	0.0	0.0	0.0	0.0
COL. TOTALS	50.0	25.0	25.0	25.0	25.0	9.6

\*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING SEPTEMBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
ESSE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	2	50.0	25.0	25.0	25.0	8.3
WNW	1	25.0	25.0	25.0	25.0	29.2
NNW	0	0.0	0.0	0.0	0.0	0.0
NNW	0	0.0	0.0	0.0	0.0	0.0
CALM	0	0.0	0.0	0.0	0.0	0.0
COL. TOTALS	50.0	25.0	25.0	25.0	25.0	16.2

\*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

N	0.0	0.0	0.0	0.0	0.0	0.0
NNE	0.0	0.0	0.0	0.0	0.0	0.0
ENE	0.0	0.0	0.0	0.0	0.0	0.0
ESE	0.0	0.0	0.0	0.0	0.0	0.0
ESSE	0.0	0.0	0.0	0.0	0.0	0.0
SSE	0.0	0.0	0.0	0.0	0.0	0.0
SSW	0.0	0.0	0.0	0.0	0.0	0.0
WSW	0	50.0	50.0	50.0	50.0	8.4
WNW	1	50.0	50.0	50.0	50.0	6.1
NNW	0	0.0	0.0	0.0	0.0	0.0
NNW	0	0.0	0.0	0.0	0.0	0.0
CALM	0	0.0	0.0	0.0	0.0	0.0
COL. TOTALS	100.0	100.0	100.0	100.0	100.0	7.2



FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MONTH OF SEPTEMBER 1978 MORNING									
THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2501
001-100	4.5	2.2	11.3	9.0	15.9	4.5	4.5	6.8	2.2
101-250	4.5		6.8	4.5		2.2	6.8	2.2	
251-500	2.2			2.2			4.5		
501-750					2.2				
TOTAL	11.2	2.2	18.1	15.7	18.1	6.7	11.3	13.5	2.2
NO INVERSION									0.0
TOTAL NO. OF OCCURENCES									44

INVERSION TYPE	1	2	3	4	5
1					
2					
3	2.2	2.2	9.0	4.5	2.2
4	6.8	4.5			
5	2.2				
TOTAL	22.5	24.7	35.9	13.5	2.2

MONTH OF SEPTEMBER 1978 AFTERNOON									
THICKNESS (METERS)	SFC	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2501
001-100					18.7	6.2	31.2	18.7	6.2
101-250									
251-500									
501-750									
TOTAL									
NO INVERSION									6.0
TOTAL NO. OF OCCURENCES									15

INVERSION TYPE	1	2	3	4	5
1					
2					
3	6.6	13.3	20.0	6.6	6.6
4			6.6	13.3	6.6
5					
TOTAL	26.4	46.5	26.5		

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING SEPTEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROM COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0	0.0	0.0
NNE							0	0	0.0	0.0
ENE							0	0	0.0	0.0
E							0	0	0.0	0.0
ESE							0	0	0.0	0.0
SSE							0	0	0.0	0.0
SSW							0	0	0.0	0.0
WSW							0	0	0.0	0.0
WNW							0	0	0.0	0.0
NNW							0	0	0.0	0.0
CALM							0	0	0.0	0.0
COL. TOTALS							0	0		

2500 METER LEVEL WINDS AFTERNOON SEPTEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROM COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0	0.0	0.0
NNE							0	0	0.0	0.0
ENE							0	0	0.0	0.0
E							0	0	0.0	0.0
ESE							0	0	0.0	0.0
SSE							0	0	0.0	0.0
SSW							0	0	0.0	0.0
WSW							0	0	0.0	0.0
WNW							0	0	0.0	0.0
NNW							0	0	0.0	0.0
CALM							0	0	0.0	0.0
COL. TOTALS							0	0		

# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR SEPTEMBER 1978

MIXING HEIGHT (METERS)

MORNING OCCURENCES

AFTERNOON OCCURENCES

0- 100	5	0
101- 250	1	0
251- 500	2	0
501- 750	2	0
751-1000	0	1
1001-1500	0	3
>1500	0	4
TOTAL	10	8

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)

6.9

10.0

AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)

--00.59

--01.27

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING CCTOBER,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 15.0 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	15.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNEE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SSE		12.5					1	12.5	4.1
S							1	0.0	
SSW		12.5					1	12.5	5.4
WSW		12.5					1	12.5	5.0
W		37.5					3	37.5	4.3
WNW							1	0.0	
NW				12.5			1	12.5	10.5
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS		87.5		12.5			8		5.1

SURFACE WINDS AFTERNOON OCTOBER,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 15.0 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	15.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NNEE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SSE	9.0						1	9.0	1.4
S	9.0						1	9.0	1.4
SSW							0	0.0	
WSW			9.0	9.0			3	27.0	7.1
W			18.1	9.0			3	27.0	9.5
WNW				9.0			1	9.0	10.0
NNW				18.1			2	18.1	11.8
CALM							0	0.0	
COL. TOTALS	27.0		27.1	45.1			11		7.8

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING

DIRECTION	WIND SPEEDS METERS/SECOND				SUMMARY	
	00.1	03.0	06.0	10.0	ROW	
	10	10	10	10	TCTAL	AVERAGE
	02.9	05.9	09.9	15.9	COUNT	PERCENT
					25.0	25.0
GREATER THAN						

[illegible]

	12.5	37.5	50.0
COL. TOTALS	12.5	37.5	50.0

100 METER LEVEL WINDS AFTERNOON OCTOBER, 1978

DIRECTION		WIND SPEEDS		METERS/SECOND		RUN		SUMMARY		AVERAGE	
		00.1	03.0	06.0	10.0	16.0	TOTAL		TOTAL		PERCENT
		02.0	10.0	10.0	10.0	25.0	COUNT	PERCENT	COUNT	PERCENT	SPEED
00.1		02.0	05.0	09.0	15.0	25.0					
03.0		02.0	05.0	09.0	15.0	25.0					
06.0		02.0	05.0	09.0	15.0	25.0					
10.0		02.0	05.0	09.0	15.0	25.0					
16.0		02.0	05.0	09.0	15.0	25.0					
25.0		02.0	05.0	09.0	15.0	25.0					

Station	Time	Temperature	Wind	Pressure	Humidity	Clouds	Visibility	Remarks
NW	12:00	18.1	9.0	101.1	75	0	10	Clear
W	12:00	18.1	9.0	101.1	75	0	10	Clear
SW	12:00	18.1	9.0	101.1	75	0	10	Clear
S	12:00	18.1	9.0	101.1	75	0	10	Clear
SE	12:00	18.1	9.0	101.1	75	0	10	Clear
E	12:00	18.1	9.0	101.1	75	0	10	Clear
NE	12:00	18.1	9.0	101.1	75	0	10	Clear
N	12:00	18.1	9.0	101.1	75	0	10	Clear

COM	TOTALS	18-0	9-0	27-1	45-2
-----	--------	------	-----	------	------

1999





FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,8UBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING OCTOBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 AVERAGE  
 SPEED

N 0.0  
 NNE 0.0  
 ENE 0.0  
 ESE 0.0  
 SSE 0.0  
 SSW 14.2  
 SSW 14.2  
 WSW 0.0  
 WSW 28.5  
 WNW 14.2  
 WNW 14.2  
 NNW 42.6  
 NNW 0.0  
 CALM 0.0

COL. TOTALS 14.2 14.2 71.1 16.8

1000 METER LEVEL WINDS AFTERNOON OCTOBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 AVERAGE  
 SPEED

N 0.0  
 NNE 0.0  
 ENE 0.0  
 ESE 0.0  
 SSE 0.0  
 SSW 11.1  
 SSW 0.0  
 WSW 0.0  
 WSW 11.1  
 WNW 11.1  
 WNW 11.1  
 NNW 11.1  
 NNW 11.1  
 CALM 0.0

COL. TOTALS 22.2 11.1 22.2 44.4 13.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,8UBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING OCTOBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 AVERAGE  
 SPEED

N 0.0  
 NNE 0.0  
 ENE 0.0  
 ESE 0.0  
 SSE 0.0  
 SSW 14.2  
 SSW 14.2  
 WSW 0.0  
 WSW 14.2  
 WNW 28.5  
 WNW 14.2  
 NNW 42.6  
 NNW 0.0  
 CALM 0.0

COL. TOTALS 56.9 42.6 17.1

750 METER LEVEL WINDS AFTERNOON OCTOBER, 1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0  
 AVERAGE  
 SPEED

N 0.0  
 NNE 0.0  
 ENE 0.0  
 ESE 0.0  
 SSE 0.0  
 SSW 10.0  
 SSW 10.0  
 WSW 10.0  
 WSW 10.0  
 WNW 10.0  
 WNW 10.0  
 NNW 10.0  
 NNW 10.0  
 CALM 0.0

COL. TOTALS 20.0 10.0 40.0 20.0 10.0 14.5

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO -- SCOBEE BS#1 HIVOL-BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING OCTOBER, 1978

DIRECTION	*****	WIND SPEEDS	METERS/SECOND	*****	ROW	SUMMARY	*****
					TOTAL	TOTAL	AVERAGE
					COUNT	PERCENT	SPEED
00.1	02.0	06.0	10.0	16.0			
10	10	10	10	10			
02.9	05.9	09.9	15.9	25.0			

[illegible]

COL. TOTALS	28.4	42.6	28.4	7	19.8
2000 METER LEVEL WINDS AFTERNOON					
OCTOBER, 1978					

DIRECTION		WIND SPEEDS		METERS/SECOND		GREATER THAN		ROW TOTAL		SUMMARY TOTAL		AVERAGE SPEED	
TO	FROM	TO	FROM	TO	FROM	TO	FROM	COUNT	PERCENT	COUNT	PERCENT	COUNT	PERCENT
00.1	03.0	06.0	10.0	16.0	25.0	25.0	25.0						
02.9	05.9	09.9	15.9	25.0	25.0	25.0	25.0						

[illegible]

COL - TOTALS	20.0	60.0	20.0	5	36.7
--------------	------	------	------	---	------



### FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL, BUBBLER & CONTIN MET

[illegible]

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE PS#1 H1VOL, BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING										OCTOBER, 1978										
DIRECTION		00.1 TO 02.9		03.0 TO 05.9		WIND SPEEDS 06.0 TO 09.9		METERS/SECOND 10.0 TO 15.9		GREATER 16.0 TO 25.0		TOTAL COUNT		ROW COUNT		SUMMARY TOTAL PERCENT		AVERAGE SPEED		
N																				
NNE																				
NENE																				
E																				
ESE																				
SE																				
SSE																				
SSW																				
WSW																				
WS																				
WNW																				
NNW																				
CALM																				
COL. TOTALS										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3
										33.3		33.3		33.3		33.3		33.3		33.3

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR OCTOBER 1978

MIXING HEIGHT (METERS) MORNING AFTERNOON OCCURENCES

0- 100	1	0
101- 250	4	0
251- 500	1	3
501- 750	3	3
751-1000	0	2
1001-1500	0	1
>1500	0	1
TOTAL	9	10

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC)

11.7

10.5

AVERAGE LAPSE RATE BELOW FIRST INVER. (DEG C /100M)

-01.21

-00.88

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING NOVEMBER,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\* ROW SUMMARY AVERAGE  
00.1 03.0 06.0 10.0 16.0 GREATER THAN 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0  
COUNT TOTAL PERCENT

N	0	0.0
NNE	1	14.2
ENE	0	0.0
E	0	0.0
ESE	0	0.0
SE	0	0.0
SSE	0	0.0
SSW	1	14.2
WSW	1	14.2
WNW	1	14.2
NNW	1	14.2
CALM	0	0.0
COL. TOTALS	42.6	56.8

3.1

SURFACE WINDS AFTERNOON NOVEMBER,1978

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\* ROW SUMMARY AVERAGE  
00.1 03.0 06.0 10.0 16.0 GREATER THAN 25.0  
TO TO TO TO TO  
02.9 05.9 09.9 15.9 25.0  
COUNT TOTAL PERCENT

N	0	0.0
NNE	1	9.0
ENE	0	0.0
E	0	0.0
ESE	0	0.0
SE	1	18.0
SSE	1	18.0
SSW	1	9.0
WSW	1	9.0
WNW	1	9.0
NNW	2	18.0
CALM	0	0.0
COL. TOTALS	36.0	45.0

3.9

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING NOVEMBER, 1978

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	GREATER THAN 25-0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N			14-2				1	14-2	8-9
NNE							0	0-0	
ENE		14-2					0	14-2	3-3
E							0	0-0	
ESE							0	0-0	
SE							0	0-0	
SSE							0	0-0	
S							0	0-0	
SSW				14-2			1	14-2	12-2
WSW							0	0-0	
W							0	0-0	
WNW							0	0-0	
NW		14-2	14-2	14-2			2	28-4	10-0
NNW							2	28-4	7-6
CALM							0	0-0	
COL. TOTALS		28-4	28-4	42-6			7		8-5

200 METER LEVEL WINDS AFTERNOON NOVEMBER, 1978

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	GREATER THAN 25-0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							2	18-0	5-5
NNE			9-0				1	9-0	9-2
ENE							0	0-0	
E							0	0-0	
ESE		9-0					0	9-0	3-9
SE							0	0-0	
SSE							0	0-0	
S							0	0-0	
SSW							0	0-0	
WSW							0	0-0	
W							0	0-0	
WNW				9-0			2	18-0	8-2
NW	18-1						2	18-1	1-9
NNW				18-1			2	18-1	12-6
CALM							0	0-0	
COL. TOTALS	27-1	27-0	18-0	27-1			11		6-6

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING NOVEMBER, 1978

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	GREATER THAN 25-0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							0	0-0	
NNE							0	0-0	
ENE							0	0-0	
E	14-2						1	14-2	2-5
ESE							0	0-0	
SE							0	0-0	
SSE							0	0-0	
S			14-2				1	14-2	7-1
SSW							0	0-0	
WSW							0	0-0	
W							0	0-0	
WNW		14-2	14-2				2	28-4	6-9
NW							1	14-2	7-9
NNW							2	28-4	
CALM							0	0-0	
COL. TOTALS		28-4	28-4	28-4	14-2		7		6-0

100 METER LEVEL WINDS AFTERNOON NOVEMBER, 1978

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	GREATER THAN 25-0	***** SUMMARY TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N							2	18-0	3-1
NNE							0	0-0	
ENE							1	9-0	9-1
E			9-0				0	0-0	
ESE							0	0-0	
SE	9-0						1	9-0	1-3
SSE							0	0-0	
S							0	0-0	
SSW			9-0				1	9-0	3-7
WSW							0	0-0	
W							1	9-0	1-1
WNW				9-0			1	9-0	14-9
NW			9-0				1	9-0	6-4
NNW			9-0				1	9-0	1-1
CALM							0	0-0	
COL. TOTALS	36-0	27-0	27-0	27-0	9-0		11		5-4



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - JOBEY BS#1 H1VOL,BUBBLER & CONTIN MET

300 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL COUNT	***** PERCENT PERCENT	***** AVERAGE SPEED
N								33.2	2			12.8
NNE								0.0	0			
ENE								0.0	0			
E								0.0	0			
ESE								0.0	0			
SE								0.0	0			
SSE								0.0	0			
S								0.0	0			
SSW								0.0	0			
WSW				16.6				16.6	1			13.6
W								0.0	0			
WNW				33.3				0.0	2			12.8
NNW			16.6					33.3	1			9.2
CALM								16.6	0			
COL. TOTALS			33.2	49.9	16.6				6			12.3

300 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL COUNT	***** PERCENT PERCENT	***** AVERAGE SPEED
N								20.0	2			5.8
NNE								10.0	1			8.0
ENE								0.0	0			
E								0.0	0			
ESE								10.0	1			3.6
SE								0.0	0			
SSE								0.0	0			
S								0.0	0			
SSW								0.0	0			
WSW								0.0	0			
W								0.0	0			
WNW				10.0				30.0	3			5.7
NNW				10.0	10.0			10.0	1			3.7
CALM								20.0	2			15.0
COL. TOTALS			20.0	30.0	20.0	10.0			10			7.4

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

500 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL COUNT	***** PERCENT PERCENT	***** AVERAGE SPEED
N								33.2	2			7.3
NNE								16.6	1			24.4
ENE								0.0	0			
E								0.0	0			
ESE								0.0	0			
SE								0.0	0			
SSE								0.0	0			
S								0.0	0			
SSW								0.0	0			
WSW								0.0	0			
W								0.0	0			
WNW				16.6				16.6	1			15.1
NNW			16.6					0.0	0			13.9
CALM								16.6	1			7.4
COL. TOTALS			16.6	16.6	16.6				6			12.5

500 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND TO TO TO TO TO	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** TOTAL COUNT	***** PERCENT PERCENT	***** AVERAGE SPEED
N								0.0	0			3.0
NNE								12.5	1			9.6
ENE								0.0	0			
E								0.0	0			
ESE								0.0	0			
SE								0.0	0			
SSE								12.5	1			4.8
S								0.0	0			
SSW								0.0	0			
WSW								0.0	0			
W								0.0	0			
WNW				12.5				12.5	1			3.8
NNW			12.5					0.0	0			14.3
CALM								12.5	1			8.9
COL. TOTALS			50.0	25.0	25.0				8			7.3

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	WIND SPEEDS METERS/SECOND TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N									0	0	0.0	16.2
NNE						25.0			1	1	0.0	
ENE									0	0	0.0	
E									0	0	0.0	
ESE									0	0	0.0	
SEE									0	0	0.0	
SSE									0	0	0.0	
S									0	0	0.0	
SSW									0	0	0.0	
WSW					25.0				1	1	25.0	16.8
W					25.0				1	1	25.0	18.6
WNW									0	0	0.0	
NW				25.0					1	1	25.0	7.6
NNW									0	0	0.0	
CALM									0	0	0.0	
COL. TOTALS				25.0	75.0				4	4		14.8

1000 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	WIND SPEEDS METERS/SECOND TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N									1	1	12.5	5.1
NNE			12.5						1	1	12.5	
ENE			12.5						1	1	12.5	5.2
E			12.5						0	0	0.0	7.9
ESE									0	0	0.0	
SEE									0	0	0.0	
SSE									0	0	0.0	
S									0	0	0.0	
SSW									0	0	0.0	
WSW									1	1	12.5	2.6
W									0	0	0.0	
WNW									1	1	12.5	4.5
NW									1	1	12.5	18.5
NNW									0	0	0.0	11.0
CALM									0	0	0.0	
COL. TOTALS			12.5	37.5	25.0	12.5	12.5		8	8		8.2

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING NOVEMBER,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	WIND SPEEDS METERS/SECOND TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N									1	1	25.0	11.9
NNE					25.0				1	1	25.0	22.2
ENE									0	0	0.0	
E									0	0	0.0	
ESE									0	0	0.0	
SEE									0	0	0.0	
SSE									0	0	0.0	
S									0	0	0.0	
SSW									0	0	0.0	
WSW					25.0				1	1	25.0	14.8
W					25.0				1	1	25.0	14.1
WNW									0	0	0.0	
NW									1	1	25.0	
NNW									0	0	0.0	
CALM									0	0	0.0	
COL. TOTALS					75.0	25.0			4	4		15.7

750 METER LEVEL WINDS AFTERNOON NOVEMBER,1978

DIRECTION	00.1 TO	03.0 TO	05.9 TO	09.9 TO	15.9 TO	25.0 TO	WIND SPEEDS METERS/SECOND TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY PERCENT	AVERAGE SPEED
N									2	2	22.2	5.7
NNE									1	1	11.1	
ENE									0	0	0.0	9.7
E									0	0	0.0	
ESE									0	0	0.0	
SEE									1	1	11.1	3.9
SSE									0	0	0.0	
S									0	0	0.0	
SSW									0	0	0.0	
WSW									0	0	0.0	
W									0	0	0.0	
WNW									0	0	0.0	
NW									2	2	22.2	9.1
NNW									1	1	11.1	13.6
CALM									1	1	11.1	16.3
COL. TOTALS			22.2	11.1	33.3	22.2	11.1		9	9		8.3

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CCNTIN MET

1500 METER LEVEL WINDS MORNING NOVEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
E	0	0	0	0	0		0	0	
ESE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
CALM	0	0	0	0	0		0	0	
COL. TOTALS	0	0	0	0	0		0	0	

1500 METER LEVEL WINDS AFTERNOON NOVEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
E	0	0	0	0	0		0	0	
ESE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
CALM	0	0	0	0	0		0	0	
COL. TOTALS	0	0	0	0	0		0	0	

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING NOVEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
E	0	0	0	0	0		0	0	
ESE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
CALM	0	0	0	0	0		0	0	
COL. TOTALS	0	0	0	0	0		0	0	

2000 METER LEVEL WINDS AFTERNOON NOVEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** WIND SPEEDS METERS/SECOND GREATER THAN 25.0	***** TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
NNE	0	0	0	0	0		0	0	
E	0	0	0	0	0		0	0	
ESE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SE	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
SSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
WSW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
NNW	0	0	0	0	0		0	0	
CALM	0	0	0	0	0		0	0	
COL. TOTALS	0	0	0	0	0		0	0	



FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MONTH OF NOVEMBER 1978 MCRNING

THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	3000 TO 3000	TOTAL
001-100	3.0		15.1	6.0	6.0						36.1
101-250		6.0	6.0	3.0	9.0	12.1	3.0				48.1
251-500		3.0		3.0	3.0						12.0
501-750											
TOTAL	6.0	9.0	6.0	18.1	18.0	12.1	9.0				3.0
NO INVERSION											32

TOTAL NO. OF OCCURENCES

INVERSION  
TYPE

INVERSION TYPE	1	2	3	4	5
1					
2	3.1	3.1	3.1	3.1	3.1
3	3.1	3.1	12.5	9.3	6.2
4	3.1	6.2	3.1	6.2	3.1
5					

MONTH OF NOVEMBER 1978 AFTERNOON

THICKNESS (METERS)	001 TO 100	101 TO 250	251 TO 500	501 TO 750	751 TO 1000	1001 TO 1500	1501 TO 2000	2001 TO 2500	2501 TO 3000	3000 TO 3000	TOTAL
001-100	4.5	9.0	4.5	11.3	11.3	15.9	6.8	4.5			67.8
101-250		2.2	6.8	2.2	2.2	9.0	2.2				24.6
251-500			2.2	2.2							4.4
501-750			2.2								2.2
TOTAL	4.5	11.2	15.7	15.7	13.5	24.9	9.0	4.5			0.0
NO INVERSION											44

TOTAL NO. OF OCCURENCES

INVERSION  
TYPE

INVERSION TYPE	1	2	3	4	5
1					
2	4.5	2.2	11.3	9.0	6.8
3	2.2	6.8	11.3	2.2	9.0
4	2.2	2.2	2.2	4.5	
5					

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING NOVEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	09.9 TO 15.9	15.9 TO 25.0	25.0 TO 25.0	TOTAL	COL. TOTALS
N								
NNE								
ENE								
E								
ESE								
SSE								
SSW								
WSW								
WNW								
NNW								
CALM								
TOTAL	100.0						3.2	3.2

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON NOVEMBER, 1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	09.9 TO 15.9	15.9 TO 25.0	25.0 TO 25.0	TOTAL	COL. TOTALS
N								
NNE								
ENE								
E								
ESE								
SSW								
SSW								
WSW								
WNW								
NNW								
CALM								
TOTAL	100.0						24.2	24.2

COL. TOTALS



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N								0	0	0	0.0	
NNE								0	0	0	0.0	
NNE								0	0	0	0.0	
ENE								0	0	0	0.0	
ESE								0	0	0	0.0	
ESE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSW								0	0	0	0.0	
SSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WNW								0	0	0	0.0	
WNW								0	0	0	0.0	
NNW								0	0	0	0.0	
NNW								0	0	0	0.0	
CALM								0	0	0	0.0	
COL. TOTALS	14.2	56.8	28.4					7				8.6

200 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N								0	0	0	0.0	
NNE								0	0	0	0.0	
NNE								0	0	0	0.0	
ENE								0	0	0	0.0	
ESE								0	0	0	0.0	
ESE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSW								0	0	0	0.0	
SSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WNW								0	0	0	0.0	
WNW								0	0	0	0.0	
NNW								0	0	0	0.0	
NNW								0	0	0	0.0	
CALM								0	0	0	0.0	
COL. TOTALS	25.0	12.5	37.5	25.0				8				10.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N								0	0	0	0.0	
NNE								0	0	0	0.0	
NNE								0	0	0	0.0	
ENE								0	0	0	0.0	
ESE								0	0	0	0.0	
ESE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSW								0	0	0	0.0	
SSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WNW								0	0	0	0.0	
WNW								0	0	0	0.0	
NNW								0	0	0	0.0	
NNW								0	0	0	0.0	
CALM								0	0	0	0.0	
COL. TOTALS	71.1	14.2	14.2					7				6.5

100 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	15.9 TO	25.0 TO	***** WIND SPEEDS METERS/SECOND GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW COUNT	***** TOTAL COUNT	***** PERCENT	***** AVERAGE SPEED
N								0	0	0	0.0	
NNE								0	0	0	0.0	
NNE								0	0	0	0.0	
ENE								0	0	0	0.0	
ESE								0	0	0	0.0	
ESE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSE								0	0	0	0.0	
SSW								0	0	0	0.0	
SSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WSW								0	0	0	0.0	
WNW								0	0	0	0.0	
WNW								0	0	0	0.0	
NNW								0	0	0	0.0	
NNW								0	0	0	0.0	
CALM								0	0	0	0.0	
COL. TOTALS	12.5	12.5	12.5	12.5	62.5			8				8.8







FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1500 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND *****	***** TOTAL COUNT *****	***** TOTAL COUNT *****	***** SUMMARY TOTAL COUNT *****	***** AVERAGE SPEED *****
N	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0	0.0	
EENE	0	0	0	0	0	0	0.0	0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0	0.0	
SEES	0	0	0	0	0	0	0.0	0	0	0.0	
SS	0	0	0	0	0	0	0.0	0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WNW	0	0	0	0	0	0	0.0	0	0	0.0	
NNW	0	0	0	0	0	0	0.0	0	0	0.0	
CALM	0	0	0	0	0	0	0.0	0	0	0.0	
COL. TOTALS	100.0							1			13.9

1500 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND *****	***** TOTAL COUNT *****	***** TOTAL COUNT *****	***** SUMMARY TOTAL COUNT *****	***** AVERAGE SPEED *****
N	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0	0.0	
EENE	0	0	0	0	0	0	0.0	0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0	0.0	
SEES	0	0	0	0	0	0	0.0	0	0	0.0	
SS	0	0	0	0	0	0	0.0	0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WNW	0	0	0	0	0	0	0.0	0	0	0.0	
NNW	0	0	0	0	0	0	0.0	0	0	0.0	
CALM	0	0	0	0	0	0	0.0	0	0	0.0	
COL. TOTALS	25.0							4			17.3

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

2000 METER LEVEL WINDS MORNING DECEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND *****	***** TOTAL COUNT *****	***** TOTAL COUNT *****	***** SUMMARY TOTAL COUNT *****	***** AVERAGE SPEED *****
N	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0	0.0	
EENE	0	0	0	0	0	0	0.0	0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0	0.0	
SEES	0	0	0	0	0	0	0.0	0	0	0.0	
SS	0	0	0	0	0	0	0.0	0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WNW	0	0	0	0	0	0	0.0	0	0	0.0	
NNW	0	0	0	0	0	0	0.0	0	0	0.0	
CALM	0	0	0	0	0	0	0.0	0	0	0.0	
COL. TOTALS	100.0							1			4.6

2000 METER LEVEL WINDS AFTERNOON DECEMBER,1978

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND *****	***** TOTAL COUNT *****	***** TOTAL COUNT *****	***** SUMMARY TOTAL COUNT *****	***** AVERAGE SPEED *****
N	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
NNE	0	0	0	0	0	0	0.0	0	0	0.0	
E	0	0	0	0	0	0	0.0	0	0	0.0	
EENE	0	0	0	0	0	0	0.0	0	0	0.0	
ESE	0	0	0	0	0	0	0.0	0	0	0.0	
SE	0	0	0	0	0	0	0.0	0	0	0.0	
SEES	0	0	0	0	0	0	0.0	0	0	0.0	
SS	0	0	0	0	0	0	0.0	0	0	0.0	
SSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WSW	0	0	0	0	0	0	0.0	0	0	0.0	
WNW	0	0	0	0	0	0	0.0	0	0	0.0	
NNW	0	0	0	0	0	0	0.0	0	0	0.0	
CALM	0	0	0	0	0	0	0.0	0	0	0.0	
COL. TOTALS	25.0							4			15.2



### FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO -- SCOEY BS#1 H1VOL, BUBBLER & CONTIN NET

MONTH OF DECEMBER 1970 MORNING

THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (METERS)	*****
100	001	251	*****
100	TO	TO	*****
250	TO	TO	*****
250	TO	TO	*****
500	TO	TO	*****
750	TO	TO	*****
1000	TO	TO	*****
1500	TO	TO	*****
2000	TO	TO	*****
2500	TO	TO	*****
3000	TO	TO	*****
3000	TO	TO	*****
THAA	>	2501	*****

	001-100	4.7	9.5	4.7	19.0	9.5	4.7	56.8
	101-250	4.7	4.7	9.5	4.7	4.7	18.9	
	251-500	4.7	4.7	4.7	4.7	18.8		
	501-750							
TOTAL	9.4	18.9	23.7	9.5	4.7	4.7	4.0	
NO INVERSION								

**INVERSION  
TYPE**

1	5.0	5.0	5.0	15.0
2		10.0	5.0	25.0
3	10.0	15.0	5.0	40.0
4		5.0	10.0	20.0
5				

MONTH OF DECEMBER 1978

[illegible][illegible]INVERSION  
TYPE[illegible]

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING DECEMBER, 1978

DIRECTION		***** WIND SPEEDS METERS/SECOND *****		***** SUMMARY *****	
TO	FROM	TO	FROM	TOTAL	AVERAGE
00.1	03.0	06.0	10.0	ROW	
TO	TO	TO	TO	TOTAL	
02.9	05.9	09.9	15.9	COUNT	PERCENT
					SPEED

**CALM**

N  
N  
N  
N  
N  
N  
N  
S  
S  
S  
S  
S  
E  
E  
E  
E  
N  
N  
N

COL. TOTALS

500 METER LEVEL WINDS AFTERNOON DECEMBER, 1978									
DIRECTION	***** WIND SPEEDS		METERS/SECOND		***** GREATER		***** SUMMARY		
	00.1	03.0	06.0	10.0	16.0	THAN	TOTAL	ROW	TOTAL
	10	10	10	10	10		COUNT	PERCENT	AVERAGE
	02.9	05.9	09.9	15.9	25.0				SPEED

COL. TOTALS	1	100.0	100.0	1	100.0	25.2
CALM	1	100.0	100.0	1	100.0	25.2
NNW	0			0	0.0	
NNM	0			0	0.0	
NW	0			0	0.0	
N	0			0	0.0	
NE	0			0	0.0	
E	0			0	0.0	
SE	0			0	0.0	
S	0			0	0.0	
SW	0			0	0.0	
WSW	0			0	0.0	
WS	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0			0	0.0	
W	0			0	0.0	
WNW	0			0	0.0	
WN	0</					

# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

MIXING HEIGHTS -FREQUENCY OF OCCURENCE FOR DECEMBER 1978

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	3	2
251- 500	0	2
501- 750	1	0
751-1000	1	1
1001-1500	0	0
>1500	1	1
TOTAL	8	6

AVERAGE WIND SPEED  
THROUGH MIXED  
LAYER (M/SEC)

7.7

10.1

AVERAGE LAPSE RATE  
BELOW FIRST INVER.  
(DEG C /100M)

-01.50

-00.94

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

SURFACE WINDS MORNING JANUARY,1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROW TOTAL	SUMMARY PERCENT	AVERAGE SPEED
N							0	0.0		
NNW							0	0.0		
NNE							0	0.0		
E							0	0.0		
ESE							0	0.0		
SE							0	0.0		
SSE							1	14.2		1.4
S							0	0.0		
SSW							0	0.0		
SW							1	14.2		3.2
WSW							0	0.0		
W							0	0.0		
WNW							1	14.2		3.4
NNW							2	28.4		5.0
CALM							1	14.0		
COL. TOTALS	42.6	28.4	14.2				7			2.4

SURFACE WINDS AFTERNOON JANUARY,1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	TOTAL COUNT	ROW TOTAL	SUMMARY PERCENT	AVERAGE SPEED
N							0	0.0		
NNW							0	0.0		
NNE							0	0.0		
E							0	0.0		
ESE							0	0.0		
SE							0	0.0		
SSE							1	9.0		4.1
S							0	0.0		
SSW							1	9.0		2.9
SW							2	18.0		4.5
WSW							1	9.0		4.4
W							1	9.0		3.9
WNW							3	27.1		7.7
NNW							1	9.0		
CALM							0	0.0		
COL. TOTALS	54.1	27.0	16.0				11			2.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SSE								0	0.0	
S								0	0.0	
SSW								0	0.0	
SW								1	14.2	1.8
WSW								2	28.4	8.3
W								0	0.0	
WNW								0	0.0	
NW								2	28.4	11.5
NNW								2	28.4	17.5
CALM								0	0.0	
COL. TOTALS	14.2	28.4	28.4	28.4	28.4			7		8.2

200 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SSE								0	0.0	
S								2	18.1	7.7
SSW								0	0.0	
SW								0	0.0	
WSW								0	0.0	
W								2	18.0	10.0
WNW								2	18.0	8.5
NW								1	19.0	7.3
NNW								4	36.0	6.8
CALM								0	0.0	
COL. TOTALS	9.0	18.0	45.1	27.0	27.0			11		7.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SSE								0	0.0	
S								1	14.2	3.4
SSW								0	0.0	
SW								1	14.2	3.0
WSW								1	14.2	3.5
W								0	0.0	
WNW								0	0.0	
NW								2	28.4	6.5
NNW								2	28.4	3.8
CALM								0	0.0	
COL. TOTALS	14.2	42.6	42.6	42.6				7		5.0

100 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	***** SUMMARY TOTAL COUNT	***** ROW TOTAL COUNT	***** AVERAGE SPEED
N								1	9.0	2.1
NNE								0	0.0	
ENE								0	0.0	
E								0	0.0	
ESE								0	0.0	
SSE								0	0.0	
S								1	9.0	6.2
SSW								0	0.0	
SW								0	0.0	
WSW								2	18.0	3.5
W								0	0.0	
WNW								1	9.0	6.9
NW								0	0.0	
NNW								2	27.0	1.7
CALM								0	0.0	
COL. TOTALS	45.1	18.0	27.0	27.0	9.0	9.0		11		4.6





FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0
CALM	0	0	0	0	0	0	0	0	0	0.0
COL. TOTALS	0	0	0	0	0	0	0	0	0	0.0

COL. TOTALS

100.0

10.9

1000 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0
CALM	0	0	0	0	0	0	0	0	0	0.0
COL. TOTALS	0	0	0	0	0	0	0	0	0	0.0

COL. TOTALS

28.4 28.4 28.4

10.7

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0
CALM	0	0	0	0	0	0	0	0	0	0.0
COL. TOTALS	0	0	0	0	0	0	0	0	0	0.0

COL. TOTALS

100.0

10.4

750 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	09.9 TO	15.9 TO	25.0 TO	GREATER THAN	ROW COUNT	TOTAL COUNT	SUMMARY AVERAGE SPEED
N	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
NNE	0	0	0	0	0	0	0	0	0	0.0
ENE	0	0	0	0	0	0	0	0	0	0.0
E	0	0	0	0	0	0	0	0	0	0.0
ESE	0	0	0	0	0	0	0	0	0	0.0
SSE	0	0	0	0	0	0	0	0	0	0.0
S	0	0	0	0	0	0	0	0	0	0.0
SSW	0	0	0	0	0	0	0	0	0	0.0
SW	0	0	0	0	0	0	0	0	0	0.0
WSW	0	0	0	0	0	0	0	0	0	0.0
W	0	0	0	0	0	0	0	0	0	0.0
WNW	0	0	0	0	0	0	0	0	0	0.0
NW	0	0	0	0	0	0	0	0	0	0.0
NNW	0	0	0	0	0	0	0	0	0	0.0
CALM	0	0	0	0	0	0	0	0	0	0.0
COL. TOTALS	0	0	0	0	0	0	0	0	0	0.0

COL. TOTALS

12.5 37.5 37.5 12.5

10.0

## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCORBY BS#1 HIVOL-BUBBLER &amp; CONTIN MET

1500 METER LEVEL WINDS MORNING JANUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER  
TO TO TO TO TO THAN  
02.9 05.9 09.9 15.9 25.0 25.0  
TOTAL COUNT TOTAL AVERAGE

N	0	0.0				
NNE	0	0.0				
NNE	0	0.0				
ENE	0	0.0				
E	0	0.0				
ESE	0	0.0				
SE	0	0.0				
SSE	0	0.0				
S	0	0.0				
SSW	0	0.0				
SW	0	0.0				
WSW	0	0.0				
W	1	100.0	100.0			19.4
WNW	0	0.0				
NW	0	0.0				
NNW	0	0.0				
CALM	0	0.0				
COL. TOTALS	1		100.0			19.4

1500 METER LEVEL WINDS AFTERNOON JANUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER  
TO TO TO TO TO THAN  
02.9 05.9 09.9 15.9 25.0 25.0  
TOTAL COUNT TOTAL AVERAGE

N	0	0.0				
NNE	0	0.0				
NNE	0	0.0				
ENE	0	0.0				
E	0	0.0				
ESE	0	0.0				
SE	0	0.0				
SSE	0	0.0				
S	0	0.0				
SSW	1	16.6	16.6			3.5
SW	0	0.0				
WSW	0	0.0				
W	1	16.6	16.6			8.5
WNW	1	16.6	16.6			11.0
NW	2	33.2	16.6			10.2
NNW	0	0.0				
CALM	0	0.0				
COL. TOTALS	6		16.6 49.8 33.2			9.1

## FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCORBY BS#1 HIVOL-BUBBLER &amp; CONTIN MET

2000 METER LEVEL WINDS MORNING JANUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER  
TO TO TO TO TO THAN  
02.9 05.9 09.9 15.9 25.0 25.0  
TOTAL COUNT TOTAL AVERAGE

N	0	0.0				
NNE	0	0.0				
NNE	0	0.0				
ENE	0	0.0				
E	0	0.0				
ESE	0	0.0				
SE	0	0.0				
SSE	0	0.0				
S	0	0.0				
SSW	0	0.0				
SW	0	0.0				
WSW	0	0.0				
W	1	100.0	100.0			14.1
WNW	0	0.0				
NW	0	0.0				
NNW	0	0.0				
CALM	0	0.0				
COL. TOTALS	1		100.0			14.1

2000 METER LEVEL WINDS AFTERNOON JANUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER  
TO TO TO TO TO THAN  
02.9 05.9 09.9 15.9 25.0 25.0  
TOTAL COUNT TOTAL AVERAGE

N	0	0.0				
NNE	0	0.0				
NNE	0	0.0				
ENE	0	0.0				
E	0	0.0				
ESE	0	0.0				
SE	0	0.0				
SSE	0	0.0				
S	0	0.0				
SSW	0	0.0				
SW	0	0.0				
WSW	0	0.0				
W	1	20.0	20.0	20.0		4.8
WNW	0	0.0				
NW	2	40.0	20.0	20.0		15.1
NNW	0	0.0				
CALM	0	0.0				
COL. TOTALS	5		20.0 20.0 20.0 20.0			14.7



FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

MONTH OF JANUARY 1979 MORNING											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											
*****											

INVERSION  
TYPE

1	2.5	2.5	5.1	10.2	2.5	22.8
2	2.5	5.1	2.5	7.6	2.5	22.7
3	2.5	10.2	2.5	2.5	2.5	30.4
4	5.1	2.5	7.6	5.1		20.3
5			2.5			2.5

MCNTH OF JANUARY 1979 AFTERNOON

*****													
THICKNESS (METERS)	SFC	INVERSION BASE HEIGHT (METERS)										TOTAL	
		001		101		251		501		751			>
		TO	TO	TO	TO	TO	TO	TO	TO	TO	TO		
001-100	1.7	3.5	7.0	7.0	8.7	12.2	19.2	7.0	3.5			69.8	
101-250			3.5	3.5	7.0	3.5	3.5	1.7				22.7	
251-500					3.5			1.7				5.2	
501-750		1.7										1.7	
TOTAL	1.7	5.2	10.5	14.0	15.7	15.7	22.7	10.4	3.5			0.0	
NO INVERSION													
TOTAL NO. OF OCCURRENCES													
57													

INVERSION  
TYPE

1	1.7	1.7	1.7	5.2	1.7	12.0
2	1.7	3.5	3.5	10.5	5.2	34.9
3	3.5	5.2	7.0	3.5	7.0	40.1
4	1.7	3.5	3.5	1.7		12.1

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND										TOTAL COUNT	TOTAL PERCENT	SUMMARY AVERAGE SPEED
	00.1		03.0		06.0		10.0		16.0				
	TO	TO	TO	TO	TO	TO	TO	TO	TO	TO			
	00.1	03.0	03.0	03.0	06.0	10.0	10.0	15.9	25.0	25.0			
	J2.9	05.9	05.9	05.9	09.9	15.9	15.9	15.9	25.0	25.0			
NNE											0	0	0
NNE											0	0	0
ENE											0	0	0
ENE											0	0	0
ESE											0	0	0
ESE											0	0	0
SSE											0	0	0
SSE											0	0	0
SSW											0	0	0
SSW											0	0	0
WSW											0	0	0
WSW											0	0	0
WNW											0	0	0
WNW											0	0	0
NNW											0	0	0
NNW											0	0	0
CALM											0	0	0
COL. TOTALS											0	0	0

COL. TOTALS

2500 METER LEVEL WINDS AFTERNOON JANUARY,1979

DIRECTION	WIND SPEEDS METERS/SECOND										TOTAL COUNT	ROW TOTAL	SUMMARY	
	00.1		03.0		06.0		10.0		16.0				TOTAL PERCENT	AVERAGE SPEED
	TO	TO	TO	TO	TO	TO	TO	TO						
	02.9	05.9	05.9	09.9	15.9	19.9	25.0	25.0	GREATER THAN					
N										0	0	0.0	0.0	
NNE										0	0	0.0	0.0	
NNE										0	0	0.0	0.0	
ENE										0	0	0.0	0.0	
ENE										0	0	0.0	0.0	
ESE										0	0	0.0	0.0	
ESE										0	0	0.0	0.0	
SSE										0	0	0.0	0.0	
SSE										0	0	0.0	0.0	
SSW										0	0	0.0	0.0	
SSW										0	0	0.0	0.0	
WSW										0	0	0.0	0.0	
WSW										0	0	0.0	0.0	
WNW										0	0	0.0	0.0	
WNW										0	0	0.0	0.0	
NNW										0	0	0.0	0.0	
NNW										0	0	0.0	0.0	
CAL M										0	0	0.0	0.0	
COL. TOTALS										0	0	0.0	0.0	

COL. TOTALS

FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO SCOBEE BS#1 HIVOL-BUBBLER & CONTIN MET

MIXING HEIGHT - FREQUENCY OF OCCURRENCE FOR JANUARY 1979

MIXING HEIGHT (METERS) MOF (M) OCCU (M) AFTERNOON OCCURRENCES

0-100 1 0

101-250 3 4

251-500 2 2

501-750 1 2

751-1000 0 1

1001-1500 0 0

>1500 0 0

TOTAL 7 9

AVERAGE WIND SPEED THROUGH MIXED LAYER (M/SEC) 5.9

6.8

AVERAGE LAPSE RATE BELOW MIXED LAYER (DEG C / 100M) -0.90

-0.97

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL-BUBBLER & CONTIN MET

SURFACE WINDS MORNING FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER THAN  
02.9 05.9 09.9 15.9 25.0 TOTAL COUNT TOTAL PERCENT AVERAGE SPEED

N

NNE

ENE

E

ESE

SSE

SSW

WSW

WNW

NNW

CALM

COL. TOTALS 99.9

SURFACE WINDS AFTERNOON FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
00.1 03.0 06.0 10.0 16.0 GREATER THAN  
02.9 05.9 09.9 15.9 25.0 TOTAL COUNT TOTAL PERCENT AVERAGE SPEED

N

NNE

ENE

E

ESE

SSE

SSW

WSW

WNW

NNW

CALM

COL. TOTALS 49.8 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

16.6 16.6 16.6 16.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 FIVOL,BUBBLER & CONTIN MET

200 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	PERCENT	AVERAGE SPEED	SUMMARY TOTAL	RCM COUNT	GREATER THAN
N							0.0		0.0	0	
NNE							0.0		0.0	0	
ENE							0.0		0.0	0	
E							0.0		0.0	0	
ESE							0.0		0.0	0	
SE							0.0		0.0	0	
SSE							0.0		0.0	0	
S							33.3	5.7	33.3	1	
SSW							0.0		0.0	0	
WSW							0.0		0.0	0	
W							33.3	7.8	33.3	1	
WNW							0.0		0.0	0	
NNW							0.0		0.0	0	
CALM							0.0		0.0	0	
COL. TOTALS	33.3	66.6						6.9		3	

200 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	PERCENT	AVERAGE SPEED	SUMMARY TOTAL	RCM COUNT	GREATER THAN
N							0.0		0.0	0	
NNE							0.0		0.0	0	
ENE							16.6	3.1	16.6	1	
E							0.0		0.0	0	
ESE							0.0		0.0	0	
SE							0.0		0.0	0	
SSE							33.3	4.7	33.3	2	
S							0.0		0.0	0	
SSW							0.0		0.0	0	
WSW							0.0		0.0	0	
W							16.6	9.5	16.6	1	
WNW							0.0		0.0	0	
NNW							16.6	14.9	16.6	1	
CALM							0.0		0.0	0	
COL. TOTALS	49.9	33.2	16.6					7.3		6	

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

100 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	PERCENT	AVERAGE SPEED	SUMMARY TOTAL	RCM COUNT	GREATER THAN
N							0.0		0.0	0	
NNE							0.0		0.0	0	
ENE							0.0		0.0	0	
E							0.0		0.0	0	
ESE							0.0		0.0	0	
SE							0.0		0.0	0	
SSE							0.0		0.0	0	
S							33.3	3.4	33.3	1	
SSW							0.0		0.0	0	
WSW							33.3	4.6	33.3	1	
W							0.0		0.0	0	
WNW							33.3	3.4	33.3	1	
NNW							0.0		0.0	0	
CALM							0.0		0.0	0	
COL. TOTALS	99.9									3	

100 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	PERCENT	AVERAGE SPEED	SUMMARY TOTAL	RCM COUNT	GREATER THAN
N							0.0		0.0	0	
NNE							0.0		0.0	0	
ENE							16.6	1.4	16.6	1	
E							0.0		0.0	0	
ESE							0.0		0.0	0	
SE							16.6	3.2	16.6	1	
SSE							0.0		0.0	0	
S							0.0		0.0	0	
SSW							0.0		0.0	0	
WSW							0.0		0.0	0	
W							0.0		0.0	0	
WNW							0.0		0.0	0	
NNW							16.6	14.9	16.6	1	
CALM							0.0		0.0	0	
COL. TOTALS	16.6	33.2	16.6	33.2				6.7		6	



FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - LOBEY BS#1 HIVOL,BUBBLER & CONTIN NET

300 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** RCM COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
E	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
S	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WS	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
COL. TOTALS	50.0	50.0	50.0	50.0	50.0	50.0		2	2	9.5	

300 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** RCM COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
E	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
S	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WS	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
COL. TOTALS	33.2	33.2	33.2	16.6	16.6	16.6		6	6	9.5	

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 HIVOL,BUBBLER & CONTIN NET

500 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** RCM COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
E	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
S	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WS	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
COL. TOTALS	100.0	100.0	100.0	100.0	100.0	100.0		2	2	10.6	

500 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** TOTAL COUNT	***** RCM COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ENE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
E	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
ESE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSE	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
S	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
SSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WSW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WS	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
WNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
NNW	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
CALM	0.0	0.0	0.0	0.0	0.0	0.0		0	0	0.0	
COL. TOTALS	33.3	33.3	33.3	33.3	33.3	33.3		3	3	12.2	

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 FIVOL,BUBELER & CONTIN MET

1000 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0 25.0

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSS  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS 100.0

1000 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0 25.0

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSS  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS 100.0

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 FIVOL,BUBELER & CONTIN MET

750 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0 25.0

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSS  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS 50.0 50.0

750 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECOND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0 25.0

N  
 NNE  
 ENE  
 ESE  
 SSE  
 SSS  
 SSW  
 WSW  
 WNW  
 NNW  
 CALM

COL. TOTALS 100.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

1500 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	RCM TOTAL CCUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
N	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	1	1	1	1	1	1	1	10.0	10.9

COL. TOTALS 100.0

1500 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	RCM TOTAL CCUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
N	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	2	2	2	2	2	2	2	100.0	5.3

COL. TOTALS 100.0

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBELER & CCNTIN MET

2000 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	RCM TOTAL CCUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
N	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	1	1	1	1	1	1	1	100.0	5.7

COL. TOTALS 100.0

2000 METER LEVEL WINDS AFTERNOON FEBRUARY, 1979

DIRECTION \*\*\*\*\* WIND SPEEDS METERS/SECND \*\*\*\*\*  
 00.1 03.0 06.0 10.0 16.0 25.0  
 TO TO TO TO TO  
 02.9 05.9 09.9 15.9 25.0

DIRECTION	00.1 TO	03.0 TO	06.0 TO	10.0 TO	16.0 TO	25.0 TO	RCM TOTAL CCUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N	0	0	0	0	0	0	0	0.0	
NNE	0	0	0	0	0	0	0	0.0	
ENE	0	0	0	0	0	0	0	0.0	
E	0	0	0	0	0	0	0	0.0	
ESE	0	0	0	0	0	0	0	0.0	
SE	0	0	0	0	0	0	0	0.0	
SSE	0	0	0	0	0	0	0	0.0	
S	0	0	0	0	0	0	0	0.0	
SSW	0	0	0	0	0	0	0	0.0	
WSW	0	0	0	0	0	0	0	0.0	
W	0	0	0	0	0	0	0	0.0	
WNW	0	0	0	0	0	0	0	0.0	
NNW	0	0	0	0	0	0	0	0.0	
N	0	0	0	0	0	0	0	0.0	
CALM	0	0	0	0	0	0	0	0.0	
COL. TOTALS	1	1	1	1	1	1	1	100.0	6.0

COL. TOTALS 100.0



LOCATION: DANIELS CO - SCOBAY BS#1 HIVCL, BUBBLER & CONTIN MET

MONTH OF FEBRUARY 1979 MORNING

	SFC	***** THICKNESS (METERS)	INVERSION TO IC	EASE 75C 100C TC	HEIGHT 100C 150C 200C TC	(METERS) *****	***** NO INVERSION *****
001-100	15.7	5.2	15.7	5.2	5.2	15.7	> TO THAN 30CO
101-25C	5.2	10.5		5.2			
251-500	5.2		5.2				
501-75C							
TOTAL	5.2	20.9	15.7	10.4	5.2	5.2	15.7

INVERSION  
TYPE

1				5.2		5.2
2				5.2		5.2
3			5.2		10.5	5.2
4		5.2		5.2		
5			5.2			5.2

MONTH OF FEBRUARY 1979 AFTERNOON

*****		INVERSION BASE HEIGHT (METERS)		*****		*****	
THICKNESS (METERS)	SFC	001 TO 100	251 TO 500	751 TO 1000	1501 TO 2000	2501 TO 3000	> THAN 3000
001-100	4.3	21.7	4.3	4.3	13.0	8.6	
101-250	4.3	8.6	4.3	4.3	4.3		
251-500			4.3	8.6			
501-750							
TOTAL	8.6	8.6	30.3	8.6	17.3	8.6	
NC INVERSION							
							TOTAL NO. OF OCCURRENCES

INVERSION  
TYPE

1					4.3
2					13.0
3			13.0		8.6
4		4.3	4.3		
5		4.3	21.7	4.3	
		4.3	8.6	4.3	

### FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCORBY PS#1 FIVOL, BUBBLER &amp; CONTIN MET

2500 METER LEVEL WINDS MORNING FEBRUARY, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	METERS/SECOND	WIND SPEEDS	PERCENT TIC	TOTAL COUNT	RCM	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N										0		0.0	
NE										0		0.0	
E										0		0.0	
SE										0		0.0	
S										0		0.0	
SW										0		0.0	
WSW										0		0.0	
WNW										0		0.0	
NW										0		0.0	
CALM										0		0.0	

COL. TOTALS

2500 METERS 1000 METERS FEBRUARY, 1979 WINDS AFTERNOON

DIRECTION	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	SUMMARY	TOTAL	AVERAGE
	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	TOTAL	PERCENT	SPEED
N	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
NNE	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
ENE	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
E	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
SE	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
SSE	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
S	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
SSW	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
WSW	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
WNW	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
NNW	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
N	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0
CALM	00.1	03.0	06.0	10.0	15.0	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0	85.0	90.0	95.0	100.0	0.0	0.0	0.0

CALM  
COL. TOTALS

# FREQUENCY SUMMARY OF MIXING HEIGHTS

LOCATION: DANIELS CO - SCOBEE BS#1 PIVOL, BUBBLER & CONTIN MET  
MIXING HEIGHTS - FREQUENCY OF OCCURENCE FOR FEBRUARY 1979

MIXING HEIGHT (METERS)	MORNING OCCURENCES	AFTERNOON OCCURENCES
0- 100	2	0
101- 250	1	2
251- 500	2	5
501- 750	0	0
751-1000	0	0
1001-1500	0	0
>1500	0	0
TOTAL	5	7

AVERAGE WIND SPEED  
THROUGH MIXED  
LAYER (M/SEC)

4.2

7.8

AVERAGE LAPSE RATE  
BELOW FIRST INVER.  
(DEG C/100M) -03.07

-01.45

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 PIVOL, BUBBLER & CONTIN MET

SURFACE WINDS MORNING MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE	10.0	10.0					2	20.0	3.4
ENE	10.0						1	10.0	1.8
E							1	10.0	
ESE	10.0	10.0					1	10.0	3.6
SE							1	10.0	4.4
SSE	10.0						1	10.0	
SSW	10.0	10.0					1	10.0	4.5
WSW							0	0.0	
W							0	0.0	
WNW	10.0						1	10.0	4.4
NW							0	0.0	
NNW		10.0					1	10.0	5.4
CALM							1	10.0	
COL. TOTALS	50.0	40.0					10		2.3

SURFACE WINDS AFTERNOON MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	METERS/SECOND GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
NE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE	10.0	20.0	20.0				3	30.0	6.2
SSE	10.0						3	30.0	3.6
SSW							0	0.0	
WSW	10.0						1	10.0	2.3
W							0	0.0	
WNW			10.0				1	10.0	8.2
NW			20.0				1	10.0	8.2
NNW							2	20.0	
CALM							0	0.0	
COL. TOTALS	30.0	20.0	50.0				10		5.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 FIVOL-BUBBLER & CUNTIA MET

200 METER LEVEL WINDS MORNING MARCH, 1979

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	METERS/SECOND IC	GREATER IFAN	TOTAL COUNT	RCM COUNT	SUMMARY PERCENT	AVERAGE SPEED
N				10-0		10-0		1	0	10-0	12-6
NNE		20-0				0-0		0	0	0-0	4-7
ENE						0-0		2	0	0-0	4-7
E			10-0			0-0		1	0	0-0	6-7
ESE						0-0		1	0	0-0	5
SE	10-0					0-0		1	0	0-0	2-2
SSE	10-0					0-0		1	0	0-0	1-8
SSW	10-0					0-0		1	0	0-0	10-4
WSW			10-0	10-0		0-0		2	1	0-0	2-6
WNW						0-0		0	0	0-0	
NNW						0-0		0	0	0-0	
NN						0-0		0	0	0-0	
CALM						0-0		0	0	0-0	
COL. TOTALS	40-0	20-0	20-0	20-0	20-0			10			5-7

200 METER LEVEL WINDS AFTERNOON MARCH, 1979

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	METERS/SECOND IC	GREATER IFAN	TOTAL COUNT	RCM COUNT	SUMMARY PERCENT	AVERAGE SPEED
N						0-0		0	0	0-0	
NNE						0-0		0	0	0-0	
ENE						0-0		0	0	0-0	
E						0-0		0	0	0-0	
ESE						0-0		0	0	0-0	
SE	10-0	10-0	10-0	10-0		0-0		2	2	0-0	10-4
SSE						0-0		2	2	0-0	2-8
SSW		10-0	10-0			0-0		2	2	0-0	6-6
WSW		10-0				0-0		1	0	0-0	4-9
WNW						0-0		0	0	0-0	
NNW				10-0		0-0		1	1	0-0	15-2
NN				20-0		0-0		2	2	0-0	13-4
CALM						0-0		0	0	0-0	
COL. TOTALS	10-0	30-0	20-0	40-0				10			8-6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 FIVOL-BUBBLER & CUNTIA MET

100 METER LEVEL WINDS MORNING MARCH, 1979

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	METERS/SECOND IC	GREATER IFAN	TOTAL COUNT	RCM COUNT	SUMMARY PERCENT	AVERAGE SPEED
N						0-0		0	0	0-0	
NNE						0-0		0	0	0-0	
ENE		20-0				0-0		2	2	0-0	4-1
E		10-0				0-0		1	0	0-0	4-6
ESE	10-0					0-0		1	0	0-0	7
SE	10-0					0-0		1	0	0-0	1-3
SSE	10-0					0-0		1	0	0-0	3-6
SSW	10-0		10-0			0-0		2	1	0-0	3-6
WSW			10-0			0-0		1	0	0-0	
WNW						0-0		0	0	0-0	
NNW				10-0		0-0		1	1	0-0	1-5
NN						0-0		1	1	0-0	10-5
CALM						0-0		0	0	0-0	
COL. TOTALS	40-0	50-0	10-0	10-0				10			3-7

100 METER LEVEL WINDS AFTERNOON MARCH, 1979

DIRECTION	00-1 TO 02-9	03-0 TO 05-9	06-0 TO 09-9	10-0 TO 15-9	16-0 TO 25-0	METERS/SECOND IC	GREATER IFAN	TOTAL COUNT	RCM COUNT	SUMMARY PERCENT	AVERAGE SPEED
N						0-0		0	0	0-0	
NNE						0-0		0	0	0-0	
ENE						0-0		0	0	0-0	
E						0-0		0	0	0-0	
ESE						0-0		0	0	0-0	
SE	10-0	10-0	10-0	10-0		0-0		3	3	0-0	7-8
SSE						0-0		1	1	0-0	5-8
SSW	10-0		10-0			0-0		2	2	0-0	4-8
WSW			10-0			0-0		1	0	0-0	6-4
WNW						0-0		0	0	0-0	
NNW				10-0		0-0		1	1	0-0	15-2
NN				20-0		0-0		2	2	0-0	13-4
CALM						0-0		0	0	0-0	
COL. TOTALS	20-0	10-0	30-0	40-0				10			8-7



# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

300 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N				11.1				1	11.1	13.7
NNE	11.1							1	11.1	2.9
NNE		11.1						1	11.1	8.4
ENE			11.1					1	11.1	6.4
ESE				11.1				1	11.1	4.2
ESE		11.1						1	11.1	
SSE					0.0			0	0.0	2.0
SSE					11.1			1	11.1	
SSW	11.1							1	11.1	15.1
SSW					0.0			0	0.0	
WSW					11.1			1	11.1	1.8
WSW					0.0			0	0.0	
W					11.1			1	11.1	1.4
WNW	11.1							1	11.1	
WNW	11.1							1	11.1	
NNW								0	0.0	
CALM								0	0.0	

COL. TOTALS 44.4 11.1 22.2 22.2 6.1

300 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
NNE								0	0.0	
ENE								0	0.0	
ESE								0	0.0	
ESE								0	0.0	
SSE								0	0.0	
SSE								0	0.0	
SSW								0	0.0	
SSW								0	0.0	
WSW								0	0.0	
WSW								0	0.0	
W								0	0.0	
WNW								0	0.0	
WNW								0	0.0	
NNW								0	0.0	
CALM								0	0.0	

COL. TOTALS 10.0 30.0 40.0 20.0 11.3

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 HIVOL,BUBBLER & CONTIN MET

500 METER LEVEL WINDS MORNING MARCH,1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								2	25.0	15.8
NNE								0	0.0	
NNE								0	0.0	
ENE								1	12.5	6.6
ENE								0	0.0	
ESE								0	0.0	
ESE								1	12.5	5.2
SSE								0	0.0	
SSE								0	0.0	
SSW								1	12.5	1.8
SSW								0	0.0	
WSW								0	0.0	
WSW								0	0.0	
W								0	0.0	
WNW								3	37.5	9.1
WNW								0	0.0	
NNW								0	0.0	
CALM								0	0.0	

COL. TOTALS 25.0 25.0 25.0 25.0 9.1

500 METER LEVEL WINDS AFTERNOON MARCH,1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	***** WIND SPEEDS METERS/SECOND	***** RCM TOTAL COUNT	***** SUMMARY TOTAL PERCENT	***** AVERAGE SPEED
N								0	0.0	
NNE								0	0.0	
NNE								0	0.0	
ENE								0	0.0	
ESE								0	0.0	
ESE								0	0.0	
SSE								0	0.0	
SSE								0	0.0	
SSW								1	10.0	16.3
SSW								1	10.0	13.1
WSW								1	10.0	13.8
WSW								1	10.0	17.9
W								0	0.0	
WNW								0	0.0	
WNW								3	30.0	16.5
NNW								0	0.0	
CALM								0	0.0	

COL. TOTALS 40.0 10.0 10.0 30.0 11.9

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

1000 METER LEVEL WINDS MORNING MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							1	20.0	14.8
NNE							1	20.0	15.5
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE		20.0					1	20.0	5.1
ESE							0	0.0	
SSE		20.0					1	20.0	5.4
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
WNW							0	0.0	
WNW							1	20.0	17.9
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	40.0	40.0	40.0	20.0	20.0		5		11.7

1000 METER LEVEL WINDS AFTERNOON MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							3	37.5	13.3
NNE							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							0	0.0	
SSE							1	12.5	12.1
SSW							0	0.0	
SSW							1	12.5	16.2
WSW							0	0.0	
WSW							0	0.0	
WNW							0	0.0	
WNW							1	12.5	1.6
NNW							1	12.5	17.2
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	12.5	25.0	25.0	37.5	37.5		8		11.8

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL,BUBBLER & CONTIN MET

750 METER LEVEL WINDS MORNING MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							2	40.0	10.9
NNE							0	0.0	
NNE							0	0.0	
ENE							1	20.0	5.0
ENE							0	0.0	
ESE							1	20.0	6.7
ESE							0	0.0	
SSE							0	0.0	
SSE							0	0.0	
SSW							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
WSW							0	0.0	
WNW							0	0.0	
WNW							1	20.0	21.2
NNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	20.0	20.0	20.0		5		10.9

750 METER LEVEL WINDS AFTERNOON MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	GREATER THAN 25.0	RCM TOTAL COUNT	SUMMARY TOTAL PERCENT	AVERAGE SPEED
N							2	22.2	13.4
NNE							0	0.0	
NNE							0	0.0	
ENE							1	11.1	.6
ENE							0	0.0	
ESE							0	0.0	
ESE							0	0.0	
SSE							1	11.1	9.8
SSE							1	11.1	17.4
SSW							0	0.0	
SSW							0	0.0	
WSW							2	22.2	10.7
WSW							2	22.2	2.2
WNW							1	11.1	25.8
WNW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	22.2	11.1	11.1	11.1	11.1		9		11.5

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, RUBELE & CONTIN NET

1500 METER LEVEL WINDS MCRNING MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N					25.0		0	0.0	
NNE							1	25.0	24.7
ENE							0	0.0	
E							0	0.0	
ESE	25.0						1	25.0	2.3
SE							0	0.0	
SSE							0	0.0	
S	25.0						1	25.0	2.5
SSW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW					25.0		1	25.0	25.7
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	50.0				25.0	25.0	4		14.8

1500 METER LEVEL WINDS AFTERNOON MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N					20.0		2	40.0	16.1
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S					20.0		1	20.0	16.1
SSW							0	0.0	
WSW							1	20.0	3.4
W	20.0				20.0		1	20.0	26.4
WNW							0	0.0	
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	20.0	20.0	20.0	40.0	20.0	20.0	5		15.6

FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBEE BS#1 H1VOL, RUBELE & CONTIN NET

2000 METER LEVEL WINDS MCRNING MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N					33.3		1	33.3	17.0
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							1	33.3	2.5
NW							1	33.3	6.1
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS	33.3		33.3	33.3			3		8.5

2000 METER LEVEL WINDS AFTERNOON MARCH, 1979

DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	WIND SPEEDS METERS/SECND GREATER THAN	***** SUMMARY TOTAL COUNT	***** SUMMARY TOTAL COUNT	***** AVERAGE SPEED
N							0	0.0	
NNE							0	0.0	
ENE							0	0.0	
E							0	0.0	
ESE							0	0.0	
SE							0	0.0	
SSE							0	0.0	
S							0	0.0	
SSW							0	0.0	
WSW							0	0.0	
W							0	0.0	
WNW							1	33.3	13.4
NW							0	0.0	
NNW							0	0.0	
CALM							0	0.0	
COL. TOTALS			33.3	33.3	33.3		3		12.2



# FREQUENCY SUMMARY OF INVERSIONS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 HIVECLUBBLER & CONTIN MET

THICKNESS (METERS)	MONTH OF				MARCH 1979				MORNING				TOTAL
	SFC	001 TO 100	101 TO 250	251 TO 500	INVERSION TO 100	EASE TO 750	BASE TO 1000	HEIGHT TO 1500	(METERS) TO 2000	***** TO 2501	***** TO 3000	***** TO 3000	
001-100	3.5				3.5	21.4	3.5	10.7	3.5				46.1
101-250						7.1		7.1	7.1				21.3
251-500	3.5	7.1	3.5		3.5	3.5	3.5		3.5				28.1
501-750		3.5											3.5
TOTAL	7.0	10.6	3.5		7.0	32.0	7.0	17.8	14.1				60.0
NO INVERSION													28

INVERSION TYPE	MONTH OF				MARCH 1979				AFTERNOON				TOTAL
	SFC	001 TO 100	101 TO 250	251 TO 500	INVERSION TO 750	EASE TO 1000	BASE TO 1500	HEIGHT TO 2000	(METERS) TO 2501	***** TO 3000	***** TO 3000	***** TO 3000	
1					3.5	7.1	3.5	7.1					14.1
2	3.5				7.1	7.1	10.7	7.1					35.5
3		10.7	3.5		14.2	7.1	3.5						39.0
4	3.5				7.1								10.6
5													

THICKNESS (METERS)	MONTH OF				MARCH 1979				AFTERNOON				TOTAL
	SFC	001 TO 100	101 TO 250	251 TO 500	INVERSION TO 750	EASE TO 1000	BASE TO 1500	HEIGHT TO 2000	(METERS) TO 2501	***** TO 3000	***** TO 3000	***** TO 3000	
001-100	2.9	2.9	2.9		8.8	5.8	2.9	5.8	5.8				37.8
101-250		2.9			2.9	5.8	11.7	2.9	8.8	2.9	2.9		40.8
251-500			5.8		5.8			2.9					17.4
501-750					2.9								2.9
TOTAL	2.9	5.8	8.7		5.8	17.5	11.6	14.6	14.6	2.9	2.9		60.0
NO INVERSION													34

INVERSION TYPE	MONTH OF				MARCH 1979				AFTERNOON				TOTAL
	SFC	001 TO 100	101 TO 250	251 TO 500	INVERSION TO 750	EASE TO 1000	BASE TO 1500	HEIGHT TO 2000	(METERS) TO 2501	***** TO 3000	***** TO 3000	***** TO 3000	
1					5.8	8.8	5.8	14.7	2.9				14.6
2	2.9	2.9	2.9		5.8	5.8	14.7	2.9	2.9				49.6
3		2.9	5.8		2.9	2.9			5.8				23.2
4					5.8	2.9							11.6
5													

# FREQUENCY SUMMARY OF UPPER LEVEL WINDS (PERCENTAGES)

LOCATION: DANIELS CO - SCOBAY BS#1 HIVECLUBBLER & CONTIN MET

2500 METER LEVEL WINDS MORNING				MARCH, 1979				2500 METER LEVEL WINDS AFTERNOON				MARCH, 1979			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** TO 25.0	***** TO 25.0	DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** TO 25.0	***** TO 25.0
NE								NE							
E								E							
SE								SE							
S								S							
SW								SW							
WSW								WSW							
WNW								WNW							
NNW								NNW							
CALM								CALM							
COL. TOTALS								COL. TOTALS							

2500 METER LEVEL WINDS MORNING				MARCH, 1979				2500 METER LEVEL WINDS AFTERNOON				MARCH, 1979			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** TO 25.0	***** TO 25.0	DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** TO 25.0	***** TO 25.0
NE								NE							
E								E							
SE								SE							
S								S							
SW								SW							
WSW								WSW							
WNW								WNW							
NNW								NNW							
CALM								CALM							
COL. TOTALS								COL. TOTALS							

2500 METER LEVEL WINDS MORNING				MARCH, 1979				2500 METER LEVEL WINDS AFTERNOON				MARCH, 1979			
DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** TO 25.0	***** TO 25.0	DIRECTION	00.1 TO 02.9	03.0 TO 05.9	06.0 TO 09.9	10.0 TO 15.9	16.0 TO 25.0	***** TO 25.0	***** TO 25.0
NE								NE							
E								E							
SE								SE							
S								S							
SW								SW							
WSW								WSW							
WNW								WNW							
NNW								NNW							
CALM								CALM							
COL. TOTALS								COL. TOTALS							



## ACUSTIC RADIATION ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCURRY  
MONTH OF APRIL 1978

\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

INVERSION BASE HEIGHT (IN METERS)

100	200	300	400	500	600	700	800	900
SFC								

0-600 HST

00  
00  
00  
00  
00  
00  
00  
00

[illegible]

DISCUSSION

0  
0  
0  
0  
0  
0  
0

[illegible]

601-1200 MS1

000  
000  
000  
000  
0-  
00  
00

00  
00  
00  
00  
00  
00  
00

VERSION

00000100

1201-1800 MŠT

O O O O O O O O

00  
00  
00  
90  
00  
00  
40  
00  
00

00  
00  
00  
00  
00  
00  
00  
00  
00

VERSION

0  
0  
0  
0  
0  
0  
1  
0  
0  
0

E 1801-2400 M5T

[illegible]

0000  
0000  
0000  
0000  
00  
00  
00  
00  
00

[illegible]

VERSION

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28  
29  
30  
31  
32  
33  
34  
35  
36  
37  
38  
39  
40  
41  
42  
43  
44  
45  
46  
47  
48  
49  
50  
51  
52  
53  
54  
55  
56  
57  
58  
59  
60  
61  
62  
63  
64  
65  
66  
67  
68  
69  
70  
71  
72  
73  
74  
75  
76  
77  
78  
79  
80  
81  
82  
83  
84  
85  
86  
87  
88  
89  
90  
91  
92  
93  
94  
95  
96  
97  
98  
99  
100  
101  
102  
103  
104  
105  
106  
107  
108  
109  
110  
111  
112  
113  
114  
115  
116  
117  
118  
119  
120  
121  
122  
123  
124  
125  
126  
127  
128  
129  
130  
131  
132  
133  
134  
135  
136  
137  
138  
139  
140  
141  
142  
143  
144  
145  
146  
147  
148  
149  
150  
151  
152  
153  
154  
155  
156  
157  
158  
159  
160  
161  
162  
163  
164  
165  
166  
167  
168  
169  
170  
171  
172  
173  
174  
175  
176  
177  
178  
179  
180  
181  
182  
183  
184  
185  
186  
187  
188  
189  
190  
191  
192  
193  
194  
195  
196  
197  
198  
199  
200  
201  
202  
203  
204  
205  
206  
207  
208  
209  
210  
211  
212  
213  
214  
215  
216  
217  
218  
219  
220  
221  
222  
223  
224  
225  
226  
227  
228  
229  
230  
231  
232  
233  
234  
235  
236  
237  
238  
239  
240  
241  
242  
243  
244  
245  
246  
247  
248  
249  
250  
251  
252  
253  
254  
255  
256  
257  
258  
259  
260  
261  
262  
263  
264  
265  
266  
267  
268  
269  
270  
271  
272  
273  
274  
275  
276  
277  
278  
279  
280  
281  
282  
283  
284  
285  
286  
287  
288  
289  
290  
291  
292  
293  
294  
295  
296  
297  
298  
299  
300  
301  
302  
303  
304  
305  
306  
307  
308  
309  
310  
311  
312  
313  
314  
315  
316  
317  
318  
319  
320  
321  
322  
323  
324  
325  
326  
327  
328  
329  
330  
331  
332  
333  
334  
335  
336  
337  
338  
339  
340  
341  
342  
343  
344  
345  
346  
347  
348  
349  
350  
351  
352  
353  
354  
355  
356  
357  
358  
359  
360  
361  
362  
363  
364  
365  
366  
367  
368  
369  
370  
371  
372  
373  
374  
375  
376  
377  
378  
379  
380  
381  
382  
383  
384  
385  
386  
387  
388  
389  
390  
391  
392  
393  
394  
395  
396  
397  
398  
399  
400  
401  
402  
403  
404  
405  
406  
407  
408  
409  
410  
411  
412  
413  
414  
415  
416  
417  
418  
419  
420  
421  
422  
423  
424  
425  
426  
427  
428  
429  
430  
431  
432  
433  
434  
435  
436  
437  
438  
439  
440  
441  
442  
443  
444  
445  
446  
447  
448  
449  
450  
451  
452  
453  
454  
455  
456  
457  
458  
459  
460  
461  
462  
463  
464  
465  
466  
467  
468  
469  
470  
471  
472  
473  
474  
475  
476  
477  
478  
479  
480  
481  
482  
483  
484  
485  
486  
487  
488  
489  
490  
491  
492  
493  
494  
495  
496  
497  
498  
499  
500  
501  
502  
503  
504  
505  
506  
507  
508  
509  
510  
511  
512  
513  
514  
515  
516  
517  
518  
519  
520  
521  
522  
523  
524  
525  
526  
527  
528  
529  
530  
531  
532  
533  
534  
535  
536  
537  
538  
539  
540  
541  
542  
543  
544  
545  
546  
547  
548  
549  
550  
551  
552  
553  
554  
555  
556  
557  
558  
559  
560  
561  
562  
563  
564  
565  
566  
567  
568  
569  
570  
571  
572  
573  
574  
575  
576  
577  
578  
579  
580  
581  
582  
583  
584  
585  
586  
587  
588  
589  
590  
591  
592  
593  
594  
595  
596  
597  
598  
599  
600  
601  
602  
603  
604  
605  
606  
607  
608  
609  
610  
611  
612  
613  
614  
615  
616  
617  
618  
619  
620  
621  
622  
623  
624  
625  
626  
627  
628  
629  
630  
631  
632  
633  
634  
635  
636  
637  
638  
639  
640  
641  
642  
643  
644  
645  
646  
647  
648  
649  
650  
651  
652  
653  
654  
655  
656  
657  
658  
659  
660  
661  
662  
663  
664  
665  
666  
667  
668  
669  
670  
671  
672  
673  
674  
675  
676  
677  
678  
679  
680  
681  
682  
683  
684  
685  
686  
687  
688  
689  
690  
691  
692  
693  
694  
695  
696  
697  
698  
699  
700  
701  
702  
703  
704  
705  
706  
707  
708  
709  
710  
711  
712  
713  
714  
715  
716  
717  
718  
719  
720  
721  
722  
723  
724  
725  
726  
727  
728  
729  
730  
731  
732  
733  
734  
735  
736  
737  
738  
739  
740  
741  
742  
743  
744  
745  
746  
747  
748  
749  
750  
751  
752  
753  
754  
755  
756  
757  
758  
759  
760  
761  
762  
763  
764  
765  
766  
767  
768  
769  
770  
771  
772  
773  
774  
775  
776  
777  
778  
779  
780  
781  
782  
783  
784  
785  
786  
787  
788  
789  
790  
791  
792  
793  
794  
795  
796  
797  
798  
799  
800  
801  
802  
803  
804  
805  
806  
807  
808  
809  
810  
811  
812  
813  
814  
815  
816  
817  
818  
819  
820  
821  
822  
823  
824  
825  
826  
827  
828  
829  
830  
831  
832  
833  
834  
835  
836  
837  
838  
839  
840  
84

-----  
FREQUENCY SUMMARY FOR FIRST INVERSION -----

0  
0  
0  
0  
0  
1  
0  
0

00  
00  
00  
00  
00  
H-C  
00  
00

0  
0  
0  
0  
0  
0  
0  
0  
0

VERSION

7900000000



# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF APRIL 1978

\*\*\*\*\* TWO HOUR STABILITY ANALYSIS \*\*\*\*\*

DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	M	M	M	M	M	M	M	M	M	M	M	M
2	M	M	M	M	M	M	M	M	M	M	M	M
3	M	M	M	M	M	M	M	M	M	M	M	M
4	M	M	M	M	M	M	M	M	M	M	M	M
5	M	M	M	M	M	M	M	M	M	M	M	M
6	M	M	M	M	M	M	M	M	M	M	M	M
7	M	M	M	M	M	M	M	M	M	M	M	M
8	M	M	M	M	M	M	M	M	M	M	M	M
9	M	M	M	M	M	M	M	M	M	M	M	M
10	M	M	M	M	M	M	M	M	M	M	M	M
11	M	M	M	M	M	M	M	M	M	M	M	M
12	M	M	M	M	M	M	M	M	M	M	M	M
13	M	M	M	M	M	M	M	M	M	M	M	M
14	M	M	M	M	M	M	M	M	M	M	M	M
15	M	M	M	M	M	M	M	M	M	M	M	M
16	M	M	M	M	M	M	M	M	M	M	M	M
17	M	M	M	M	M	M	M	M	M	M	M	M
18	M	M	M	M	M	M	M	M	M	M	M	M
19	M	M	M	M	M	M	M	M	M	M	M	M
20	M	M	M	M	M	M	M	M	M	M	M	M
21	M	M	M	M	M	M	M	M	M	M	M	M
22	M	M	M	M	M	M	M	M	M	M	M	M
23	M	M	M	M	M	M	M	M	M	M	M	M
24	M	M	M	M	M	M	M	M	M	M	M	M
25	M	M	M	M	M	M	M	M	M	M	M	M
26	F	E	D	C	C	C	C	C	C	E	E	E
27	M	M	M	M	M	M	M	M	M	M	M	M
28	E	E	D	D	D	D	D	D	E	E	E	E
29	E	L	E	D	C	C	C	C	D	E	E	E
30	E	L	E	D	C	C	C	C	D	F	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % U= 0.0 % C= 4.7 % D= 3.6 % E= 5.6 % F= 1.1 %  
 U= 0.0 % A=05.0 %

NOT : UNKNOWN=MISSING DATA  
 CLOUD COVER CONDITIONS USED FROM NWS STATION AT ELASGOW  
 WIND DATA TAKEN AT SITE

# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF MAY 1978

\*\*\*\*\* FIRST INVERSION \*\*\*\*\*

DAY	0000-0600 MST BASE TOP (100M)(100M) *	0601-1200 MST BASE TOP (100M)(100M) *	1201-1800 MST BASE TOP (100M)(100M) *	1801-2400 MST BASE TOP (100M)(100M) *
1	3	1	3	0
2	3	1	3	0
3	3	1	3	0
4	3	1	3	0
5	3	1	3	0
6	3	1	3	0
7	3	1	3	0
8	3	1	3	0
9	3	1	3	0
10	3	1	3	0
11	3	1	3	0
12	3	1	3	0
13	3	1	3	0
14	3	1	3	0
15	3	1	3	0
16	3	1	3	0
17	3	1	3	0
18	3	1	3	0
19	3	1	3	0
20	3	1	3	0
21	3	1	3	0
22	3	1	3	0
23	3	1	3	0
24	3	1	3	0
25	3	1	3	0
26	3	1	3	0
27	3	1	3	0
28	3	1	3	0
29	3	1	3	0
30	3	1	3	0

\*\*\*\*\* SECOND INVERSION \*\*\*\*\*

DAY	0601-1200 MST BASE TOP (100M)(100M) *	1201-1800 MST BASE TOP (100M)(100M) *	1801-2400 MST BASE TOP (100M)(100M) *
1	3	3	3
2	3	3	3
3	3	3	3
4	3	3	3
5	3	3	3
6	3	3	3
7	3	3	3
8	3	3	3
9	3	3	3
10	3	3	3
11	3	3	3
12	3	3	3
13	3	3	3
14	3	3	3
15	3	3	3
16	3	3	3
17	3	3	3
18	3	3	3
19	3	3	3
20	3	3	3
21	3	3	3
22	3	3	3
23	3	3	3
24	3	3	3
25	3	3	3
26	3	3	3
27	3	3	3
28	3	3	3
29	3	3	3
30	3	3	3

NOTE: FOR TYPE 1=FOUNTAIN, 2=SUBSIDENCE, 3=FLUTTER, 4=SPIKE, 5=CHL, 6=UNKNOWN  
 7=NO DATA, 8=LAMINAR FLOW, 9=UNKNOWN  
 N=UNKNOWN, INVERSION=MISSING DATA, P=UNKNOWN

ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH CF MAY 1978

\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
---	---	---	---	---	---	---	---	---	---	---	---
0- 600 MST	0	0	0	0	1	1	0	0	0	0	2
001-100	0	0	0	0	1	1	0	0	0	0	2
101-300	0	0	0	0	1	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	18
TOTAL	0	0	0	2	1	1	0	0	0	0	21
---	---	---	---	---	---	---	---	---	---	---	---
601-1200 MST	0	0	0	0	0	0	0	0	0	0	0
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	1	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	27
TOTAL	0	0	0	0	1	0	0	0	0	0	28
---	---	---	---	---	---	---	---	---	---	---	---
1201-1800 MST	0	0	0	0	0	0	0	0	0	0	0
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	31
TOTAL	0	0	0	0	0	0	0	0	0	0	31
---	---	---	---	---	---	---	---	---	---	---	---
1801-2400 MST	0	0	0	0	0	0	0	0	0	0	0
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	26
TOTAL	0	0	2	0	0	0	0	0	0	0	28
---	---	---	---	---	---	---	---	---	---	---	---
FREQUENCY SUMMARY FOR SECOND INVERSION	0	0	0	0	0	0	0	0	0	0	0
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	102
TOTAL	0	0	0	2	2	2	0	0	0	0	108

ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH CF MAY 1978

\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
---	---	---	---	---	---	---	---	---	---	---	---
0- 600 MST	0	0	0	1	0	0	0	0	0	0	1
001-100	0	0	0	1	0	0	0	0	0	0	1
101-300	24	1	0	0	0	0	0	0	0	0	25
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	3
TOTAL	25	1	0	1	0	0	0	0	0	0	30
---	---	---	---	---	---	---	---	---	---	---	---
601-1200 MST	0	0	0	0	0	0	0	0	0	0	0
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	1	3	1	0	0	0	0	0	0	0	4
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	5
TOTAL	1	6	4	0	0	0	0	0	0	0	16
---	---	---	---	---	---	---	---	---	---	---	---
1201-1800 MST	0	0	0	0	0	0	0	0	0	0	0
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	2	0	0	0	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	25
TOTAL	2	0	0	0	0	0	0	0	0	0	27
---	---	---	---	---	---	---	---	---	---	---	---
1801-2400 MST	0	0	0	0	0	0	0	0	0	0	0
001-100	3	0	0	0	0	0	0	0	0	0	3
101-300	21	0	0	0	0	0	0	0	0	0	21
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	4
TOTAL	24	0	2	0	0	0	0	0	0	0	30
---	---	---	---	---	---	---	---	---	---	---	---
FREQUENCY SUMMARY FOR FIRST INVERSION	3	3	3	1	0	0	0	0	0	0	10
001-100	3	3	3	1	0	0	0	0	0	0	10
101-300	48	4	0	0	0	0	0	0	0	0	55
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION	0	0	0	0	0	0	0	0	0	0	37
TOTAL	52	7	6	1	0	0	0	0	0	0	103





# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF JUNE 1978

\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---TIME 0- 600 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 6  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 24  
NO INVERSION  
TOTAL 0 0 0 0 2 3 1 0 0 0 30

---TIME 601-1200 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 2  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 28  
NO INVERSION  
TOTAL 0 0 0 0 1 1 0 0 0 0 30

---TIME 1201-1800 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 30  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0 30

---TIME 1801-2400 MST ---

001-100 0 1 0 0 0 0 0 0 0 0 1  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 26  
NO INVERSION  
TOTAL 0 1 3 0 0 0 0 0 0 0 30

---TIME 0- 600 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0 0

---TIME 601-1200 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0 0

---TIME 1201-1800 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0 0

---TIME 1801-2400 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0 0

---TIME 0- 600 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0 0

# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF JUNE 1978

\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---TIME 0- 600 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0  
101-300 27 1 0 0 0 0 0 0 0 0 28  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 29 1 0 0 0 0 0 0 0 0 30

---TIME 601-1200 MST ---

001-100 0 3 7 2 1 0 0 0 0 0 16  
101-300 2 5 7 0 0 0 0 0 0 0 16  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 2 8 14 4 1 0 0 0 0 0 30

---TIME 1201-1800 MST ---

001-100 1 2 0 0 0 0 0 0 0 0 3  
101-300 1 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 26  
NO INVERSION  
TOTAL 2 2 0 0 0 0 0 0 0 0 30

---TIME 1801-2400 MST ---

001-100 7 0 0 0 0 0 0 0 0 0 7  
101-300 20 2 0 0 0 0 0 0 0 0 22  
301-500 1 0 0 0 0 0 0 0 0 0 1  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 28 2 0 0 0 0 0 0 0 0 30

---TIME 0- 600 MST ---

001-100 8 5 7 2 1 0 0 0 0 0 23  
101-300 50 8 7 2 0 0 0 0 0 0 67  
301-500 3 0 0 0 0 0 0 0 0 0 3  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 61 13 14 4 1 0 0 0 0 0 120

---TIME 601-1200 MST ---

001-100 8 5 7 2 1 0 0 0 0 0 23  
101-300 50 8 7 2 0 0 0 0 0 0 67  
301-500 3 0 0 0 0 0 0 0 0 0 3  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 61 13 14 4 1 0 0 0 0 0 120

---TIME 1201-1800 MST ---

001-100 1 2 0 0 0 0 0 0 0 0 3  
101-300 1 0 0 0 0 0 0 0 0 0 1  
301-500 0 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 2 2 0 0 0 0 0 0 0 0 3

---TIME 1801-2400 MST ---

001-100 7 0 0 0 0 0 0 0 0 0 7  
101-300 20 2 0 0 0 0 0 0 0 0 22  
301-500 1 0 0 0 0 0 0 0 0 0 1  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 28 2 0 0 0 0 0 0 0 0 30

---TIME 0- 600 MST ---

001-100 8 5 7 2 1 0 0 0 0 0 23  
101-300 50 8 7 2 0 0 0 0 0 0 67  
301-500 3 0 0 0 0 0 0 0 0 0 3  
501-900 0 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 61 13 14 4 1 0 0 0 0 0 120

# ACOUSTIC RADAR ANALYSIS

PCPLAR RIVER UPPER AIR STUDY - SCOBEE	MONTH OF JULY	1978
1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18
19	20	21
22	23	24
25	26	27
28	29	30
31	32	33
34	35	36
37	38	39
40	41	42
43	44	45
46	47	48
49	50	51
52	53	54
55	56	57
58	59	60
61	62	63
64	65	66
67	68	69
70	71	72
73	74	75
76	77	78
79	80	81
82	83	84
85	86	87
88	89	90
91	92	93
94	95	96
97	98	99
100	101	102
103	104	105
106	107	108
109	110	111
112	113	114
115	116	117
118	119	120
121	122	123
124	125	126
127	128	129
130	131	132
133	134	135
136	137	138
139	140	141
142	143	144
145	146	147
148	149	150
151	152	153
154	155	156
157	158	159
160	161	162
163	164	165
166	167	168
169	170	171
172	173	174
175	176	177
178	179	180
181	182	183
184	185	186
187	188	189
190	191	192
193	194	195
196	197	198
199	200	201
202	203	204
205	206	207
208	209	210
211	212	213
214	215	216
217	218	219
220	221	222
223	224	225
226	227	228
229	230	231
232	233	234
235	236	237
238	239	240
241	242	243
244	245	246
247	248	249
250	251	252
253	254	255
256	257	258
259	260	261
262	263	264
265	266	267
268	269	270
271	272	273
274	275	276
277	278	279
280	281	282
283	284	285
286	287	288
289	290	291
292	293	294
295	296	297
298	299	300
301	302	303
304	305	306
307	308	309
310	311	312
313	314	315
316	317	318
319	320	321
322	323	324
325	326	327
328	329	330
331	332	333
334	335	336
337	338	339
340	341	342
343	344	345
346	347	348
349	350	351
352	353	354
355	356	357
358	359	360
361	362	363
364	365	366

First Inversion

[illegible]

\*\*\* SECOND INVERSION \*\*\*

[illegible]

NOTE: L=UNKNOWN M=MISSING DATA  
CLOUD COVER CONDITIONS USED FROM NWS STATION AT GLASGOW  
WIND DATA TAKEN AT SITE

NOTE: FOR TYPE 1=FRONTAL,2=SUBSIDENCE,3=RADIATION (SPIKED ECHL)  
4=RADIATION (LAMINAR ECHL) 9=UNKNOWN  
N=NO INVERSION M=MISSING DATA OR UNKNOWN

ACOUSTIC RADAR ANALYSIS  
POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF JULY 1978  
\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME	0- 600 MSI										
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	23	0	0	0	0	0	0	0	0	0	23
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											
TOTAL	30	0	0	0	0	0	0	0	0	0	31
---TIME	601-1200 MSI										
001-100	0	4	3	3	1	0	0	0	0	0	11
101-300	0	1	1	4	0	0	0	0	0	0	6
301-500	0	1	0	0	0	0	0	0	0	0	2
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	0	11	9	7	2	0	0	0	0	0	31
---TIME	1201-1800 MSI										
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	1	0	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	0	1	1	1	0	0	0	0	0	0	3
---TIME	1801-2400 MSI										
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	22	2	0	0	0	0	0	0	0	0	24
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	29	2	0	0	0	0	0	0	0	0	31

FREQUENCY SUMMARY FOR FIRST INVERSION

001-100	6	4	3	3	1	0	0	0	0	0	17
101-300	47	9	6	5	0	0	0	0	0	0	68
301-500	5	1	1	0	0	0	0	0	0	0	7
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											
TOTAL	59	14	10	8	2	0	0	0	0	0	124

ACOUSTIC RADAR ANALYSIS  
POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF JULY 1978  
\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
---TIME	0- 600 MSI										
001-100	0	0	0	0	2	2	0	0	0	0	4
101-300	0	0	0	0	3	1	0	0	0	0	4
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	0	0	0	2	5	3	0	0	0	0	31
---TIME	601-1200 MSI										
001-100	0	0	0	0	0	1	1	0	0	0	2
101-300	0	0	0	0	0	0	0	1	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	0	0	0	1	0	1	1	1	0	0	3
---TIME	1201-1800 MSI										
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	0	0	0	0	0	0	0	0	0	0	0
---TIME	1801-2400 MSI										
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	0	0	0	4	0	0	0	0	0	0	31

FREQUENCY SUMMARY FOR SECOND INVERSION

001-100	0	0	0	0	2	3	1	1	0	0	6
101-300	0	0	0	0	3	1	0	0	0	0	4
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											
TOTAL	0	0	0	7	5	4	1	1	0	0	124



## ACUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER A.I. STUDY - SLOBEY MONTH OF JULY 1978

\*\*\*\*\* TWO HOUR STABILITY ANALYSIS \*\*\*\*\*

DAY	FOUR											
	02	04	06	08	10	12	14	16	18	20	22	24
1	F	D	F	C	C	C	C	C	D	E	F	D
2	F	E	E	C	C	B	C	C	D	E	D	D
3	D	D	E	C	C	A	B	C	B	C	E	D
4	D	D	E	C	C	C	C	C	C	C	E	E
5	F	F	F	D	D	D	C	B	D	C	D	F
6	E	E	E	D	C	C	C	C	C	E	E	E
7	E	D	E	D	D	C	C	C	D	F	E	E
8	E	D	D	D	C	C	C	C	D	F	F	F
9	F	F	F	D	C	A	C	C	C	E	E	E
10	F	F	E	C	C	C	C	C	C	E	E	D
11	C	L	E	E	C	D	B	B	C	E	D	E
12	E	E	E	D	C	C	C	C	D	F	F	F
13	F	F	M	M	M	C	C	C	D	F	F	F
14	F	F	F	D	B	A	B	C	C	D	F	E
15	F	F	F	F	D	A	A	C	E	E	E	E
16	E	E	E	C	D	A	C	C	D	D	E	E
17	D	M	D	C	D	C	D	D	C	E	E	E
18	F	F	F	C	D	C	C	C	D	D	D	D
19	E	F	F	D	C	C	C	C	C	E	F	F
20	F	F	F	B	D	C	C	C	C	D	F	F
21	F	F	F	E	D	B	C	C	B	D	F	F
22	F	F	E	D	D	A	C	C	C	D	F	F
23	F	F	E	C	D	C	C	C	C	E	E	E
24	E	E	E	E	D	C	C	C	D	D	F	F
25	E	E	E	D	C	D	C	C	C	F	F	F
26	F	F	F	D	C	C	C	C	C	E	E	E
27	F	E	E	E	E	D	C	C	C	F	E	E
28	F	F	D	C	C	C	C	C	C	F	E	E
29	E	E	E	D	C	C	C	C	C	E	E	E
30	F	F	F	D	C	C	C	C	C	D	E	E
1	F	F	F	B	D	C	C	C	C	D	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A = 1.6 % B = 3.5 % C = 29.0 % D = 22.0 % E = 22.0 % F = 20.7 %  
U = 0.0 % W = 1.1 %

NOTE: U=UNKNOWN M=MISSING DATA  
CLOUD COVER CONDITIONS USED FROM NWS STATION AT GLASGOW  
WIND DATA TAKEN AT SITE

## ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBIEY	MCNTH CF	AUGUST	1978
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
7	7	7	7
8	8	8	8
9	9	9	9
10	10	10	10
11	11	11	11
12	12	12	12
13	13	13	13
14	14	14	14
15	15	15	15
16	16	16	16
17	17	17	17
18	18	18	18
19	19	19	19
20	20	20	20
21	21	21	21
22	22	22	22
23	23	23	23
24	24	24	24
25	25	25	25
26	26	26	26
27	27	27	27
28	28	28	28
29	29	29	29
30	30	30	30
31	31	31	31
32	32	32	32
33	33	33	33
34	34	34	34
35	35	35	35
36	36	36	36
37	37	37	37
38	38	38	38
39	39	39	39
40	40	40	40
41	41	41	41
42	42	42	42
43	43	43	43
44	44	44	44
45	45	45	45
46	46	46	46
47	47	47	47
48	48	48	48
49	49	49	49
50	50	50	50
51	51	51	51
52	52	52	52
53	53	53	53
54	54	54	54
55	55	55	55
56	56	56	56
57	57	57	57
58	58	58	58
59	59	59	59
60	60	60	60
61	61	61	61
62	62	62	62
63	63	63	63
64	64	64	64
65	65	65	65
66	66	66	66
67	67	67	67
68	68	68	68
69	69	69	69
70	70	70	70
71	71	71	71
72	72	72	72
73	73	73	73
74	74	74	74
75	75	75	75
76	76	76	76
77	77	77	77
78	78	78	78
79	79	79	79
80	80	80	80
81	81	81	81
82	82	82	82
83	83	83	83
84	84	84	84
85	85	85	85
86	86	86	86
87	87	87	87
88	88	88	88
89	89	89	89
90	90	90	90
91	91	91	91
92	92	92	92
93	93	93	93
94	94	94	94
95	95	95	95
96	96	96	96
97	97	97	97
98	98	98	98
99	99	99	99
100	100	100	100

FIRST INVERSION

[illegible]

\*\*\*  
\*\* SECOND INVERSION \*\*

[illegible]

NOTE: FOR TYPE 1=FRONTAL,2=SUBSIDIENCE,3=RADIATION (SPIKED ECHC)  
 +=RADIATION (LAMINAR ECHC) 5=UNKNOWN  
 N=NO INVENTION M=MISSING DATA 6=UNKNOWN

# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBAY MONTH OF AUGUST 1978

\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
---	TIME	0-600	MST								
001-100	0	0	0	1	0	1	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	29
NO INVERSION											
TOTAL	0	0	0	1	0	1	0	0	0	0	31
---	TIME	601-1200	MST								
001-100	0	0	0	1	0	0	0	0	0	0	0
101-300	0	0	1	0	0	0	0	0	0	0	3
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	28
NO INVERSION											
TOTAL	0	0	1	1	0	1	0	0	0	0	31
---	TIME	1201-1800	MST								
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	29
NO INVERSION											
TOTAL	0	0	0	1	0	0	1	0	0	0	31
---	TIME	1801-2400	MST								
001-100	0	0	0	1	0	0	0	0	1	0	4
101-300	0	0	1	0	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	25
NO INVERSION											
TOTAL	0	0	1	1	0	0	1	0	1	0	31

## FREQUENCY SUMMARY FOR SECOND INVERSION

001-100	0	0	0	2	1	2	0	0	1	0	6
101-300	0	0	2	3	0	0	0	0	0	0	7
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	111
NO INVERSION											
TOTAL	0	0	2	5	1	3	1	0	1	0	124

# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBAY MONTH OF AUGUST 1978

\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
---	TIME	0-600	MST								
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											0
TOTAL	31	0	0	0	0	0	0	0	0	0	31
---	TIME	601-1200	MST								
001-100	0	1	9	8	4	0	0	0	0	0	22
101-300	0	0	3	2	0	0	0	0	0	0	5
301-500	1	0	1	1	0	0	0	0	0	0	3
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											1
TOTAL	1	1	13	11	4	0	0	0	0	0	31
---	TIME	1201-1800	MST								
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	1	0	0	0	0	0	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	28
NO INVERSION											
TOTAL	2	0	0	0	0	0	0	0	0	0	30
---	TIME	1801-2400	MST								
001-100	9	0	0	0	0	0	0	0	0	0	9
101-300	21	0	0	0	0	0	0	0	0	0	21
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											0
TOTAL	31	0	0	0	0	0	0	0	0	0	31

## FREQUENCY SUMMARY FOR FIRST INVERSION

001-100	10	1	9	8	4	0	0	0	0	0	32
101-300	41	0	3	2	0	0	0	0	0	0	46
301-500	13	0	1	1	0	0	0	0	0	0	15
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											29
TOTAL	65	1	13	11	4	0	0	0	0	0	123





ACOUSTIC RADAR ANALYSIS  
POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF SEPT. 1978  
\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
0-600 MST											
001-100	0	0	0	0	0	1	0	0	0	0	1
101-300	9	0	0	0	0	0	0	0	0	0	9
301-500	13	0	0	0	0	0	0	0	0	0	13
501-900	2	0	0	0	0	0	0	0	0	0	2
NO INVERSION											5
TOTAL	24	0	0	0	1	0	0	0	0	0	30

001-100	0	2	5	3	1	1	0	0	0	0	12
101-300	0	0	4	4	0	0	0	0	0	0	10
301-500	1	0	0	0	0	0	0	0	0	0	1
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											7
TOTAL	1	2	9	7	3	1	0	0	0	0	30

001-100	8	0	0	0	0	0	0	0	0	0	9
101-300	6	0	0	0	0	0	0	0	0	0	6
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											15
TOTAL	14	0	0	0	0	0	1	0	0	0	30

001-100	2	0	0	0	0	0	0	0	0	0	2
101-300	19	0	0	0	0	0	0	0	0	0	19
301-500	4	0	0	0	0	0	0	0	0	0	4
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											4
TOTAL	26	0	0	0	0	0	0	0	0	0	30

FREQUENCY SUMMARY FOR FIRST INVERSION

001-100	10	2	5	3	2	1	1	0	0	0	24
101-300	34	0	4	4	0	0	0	0	0	0	44
301-500	18	0	0	0	0	0	0	0	0	0	18
501-900	3	0	0	0	0	0	0	0	0	0	3
NO INVERSION											31
TOTAL	65	2	9	7	4	1	1	0	0	0	120

ACOUSTIC RADAR ANALYSIS  
POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF SEPT. 1978  
\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
0-600 MST											
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	1	0	0	0	0	1
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	1	0	0	0	0	30

001-100	0	0	0	0	0	1	0	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											29
TOTAL	0	0	0	0	0	1	0	0	0	0	30

001-100	0	0	0	1	0	0	0	0	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											28
TOTAL	0	0	0	1	0	0	1	0	0	0	30

001-100	0	0	0	0	0	0	0	0	1	0	1
101-300	0	0	0	1	0	0	0	0	0	0	2
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											27
TOTAL	0	0	0	1	0	0	0	0	1	0	30

FREQUENCY SUMMARY FOR SECOND INVERSION

001-100	0	0	0	1	0	1	1	0	0	0	4
101-300	0	0	0	1	0	0	0	0	0	0	3
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	0
NO INVERSION											113
TOTAL	0	0	0	2	1	2	1	0	1	0	120

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF SEPT. 1978

\*\*\*\*\* TWO HOUR STABILITY ANALYSIS \*\*\*\*\*

DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	E	F	F	D	C	C	C	C	D	F	F	F
2	F	F	F	F	D	C	C	C	C	D	E	E
3	E	E	E	E	C	D	C	C	C	F	F	F
4	E	F	F	F	D	C	C	C	C	F	E	E
5	F	E	E	E	D	C	C	C	C	E	E	E
6	E	E	D	D	C	C	C	C	C	E	E	E
7	E	E	E	C	C	C	C	C	C	E	E	E
8	E	E	D	D	C	C	C	C	D	E	F	F
9	F	E	E	E	D	C	C	C	C	E	E	E
10	F	E	E	E	C	D	C	C	C	E	E	E
11	E	D	D	D	D	D	D	U	U	U	U	U
12	D	D	U	U	U	D	D	U	D	C	U	D
13	U	D	D	C	D	C	C	C	C	D	C	C
14	U	U	U	D	C	C	C	C	C	C	E	D
15	E	E	E	E	C	D	C	C	C	E	E	E
16	E	E	E	C	D	C	C	C	C	E	E	F
17	E	E	E	C	C	C	C	C	C	D	F	E
18	E	E	E	E	D	D	D	D	D	D	D	D
19	D	D	U	U	C	D	C	C	C	D	D	F
20	F	F	F	F	D	C	C	C	C	C	D	E
21	E	E	E	E	C	D	C	C	C	E	E	E
22	E	F	F	E	C	D	C	C	C	E	E	E
23	F	E	E	E	D	C	C	C	C	E	E	E
24	F	F	F	E	E	D	C	C	C	E	E	E
25	E	E	E	F	C	D	C	C	C	E	F	F
26	E	E	E	E	D	C	C	C	C	E	E	E
27	E	E	E	E	D	C	C	C	C	E	E	E
28	E	E	E	E	D	C	C	C	C	E	E	E
29	F	F	F	F	D	C	C	C	C	E	F	F
30	F	E	E	E	C	D	C	D	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY  
A= 0.0 % B= 0.0 % C=26.9 % D=18.9 % E=36.1 % F=13.3 %  
U= 4.7 % M= 0.0 %

NOTE: U=UNKNOWN MISSING DATA  
CLOUD COVER CONDITIONS USED FROM NWS STATION AT GLASGOW  
WIND DATA TAKEN AT SITE

POPLAR RIVER UPPER AIR STUDY - SCOBEE MONTH OF OCTOBER 1978

\*\*\*\*\* FIRST INVERSION \*\*\*\*\*  
0000-0600 MST  
BASE TOP TYPE  
(100M)(100M) \*

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0000-0600 MST BASE TOP TYPE (100M)(100M) *	0	N	C	N	N	N	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
0601-1200 MST BASE TOP TYPE (100M)(100M) *	3	N	4	N	N	2	3	4	2	3	2	2	2	4	3	1	3	2	7	2	0	1	2	1	3	0	3	2	0	0	0
1201-1800 MST BASE TOP TYPE (100M)(100M) *	3	N	3	N	N	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
1801-2400 MST BASE TOP TYPE (100M)(100M) *	5	N	5	N	N	2	4	5	2	5	4	5	4	4	6	5	3	5	5	4	8	4	4	4	4	4	4	4	4	4	4
2401-0000 MST BASE TOP TYPE (100M)(100M) *	3	N	3	N	N	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
0000-0600 MST BASE TOP TYPE (100M)(100M) *	4	N	4	N	N	2	3	6	3	4	3	4	3	2	4	4	3	3	3	4	5	3	5	4	6	3	4	8	6	3	3
0601-1200 MST BASE TOP TYPE (100M)(100M) *	3	N	3	N	N	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	
1201-1800 MST BASE TOP TYPE (100M)(100M) *	2	N	1	N	1	N	1	2	1	2	2	1	2	2	9	5	1	4	2	3	2	1	2	N	2	3	1	1	4	2	1
1801-2400 MST BASE TOP TYPE (100M)(100M) *	0	N	0	N	0	N	0	0	0	0	0	0	0	0	0	0	0	7	3	0	2	0	0	0	0	0	0	0	0	0	0
2401-0000 MST BASE TOP TYPE (100M)(100M) *	3	N	3	N	N	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	

\*\*\*\*\* SECOND INVERSION \*\*\*\*\*  
0000-0600 MST  
BASE TOP TYPE  
(100M)(100M) \*

DAY	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
0000-0600 MST BASE TOP TYPE (100M)(100M) *	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
0601-1200 MST BASE TOP TYPE (100M)(100M) *	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
1201-1800 MST BASE TOP TYPE (100M)(100M) *	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
1801-2400 MST BASE TOP TYPE (100M)(100M) *	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
2401-0000 MST BASE TOP TYPE (100M)(100M) *	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

NOTE: FOR TYPE 1=FRONTAL, 2=SUBSIDENCE, 3=RADIATION (SPIKED ECHO)  
4=RADIATION (LAMINAR ECHO) 9=UNKNOWN  
N=NO INVERSION MISSING DATA OR UNKNOWN

ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCUBEY MONTH OF OCTOBER 1978

\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---	TIME	0- 600 MST								TOTAL
001-100	0	0	0	0	0	0	0	1	0	1
101-300	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0
NO INVERSION										30
TOTAL	0	0	0	0	0	0	0	1	0	31

---	TIME	601-1200 MST								TOTAL
001-100	0	0	0	0	0	1	0	0	0	1
101-300	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0
NO INVERSION										29
TOTAL	0	0	0	1	0	0	1	0	0	31

---	TIME	1201-1800 MST								TOTAL
001-100	0	0	0	0	0	0	1	0	0	2
101-300	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0
NO INVERSION										28
TOTAL	0	0	1	0	0	1	0	1	0	31

---	TIME	1801-2400 MST								TOTAL
001-100	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0
NO INVERSION										28
TOTAL	0	0	0	1	0	1	0	1	0	31

FREQUENCY SUMMARY FOR SECOND INVERSION

001-100	0	0	0	1	0	2	1	1	1	6
101-300	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0
NO INVERSION										115
TOTAL	0	0	1	2	0	2	1	2	1	124

ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCUBEY MONTH OF OCTOBER 1978

\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---	TIME	0- 600 MST								TOTAL
001-100	0	0	0	0	0	0	0	0	0	0
101-300	13	0	0	0	0	0	0	0	0	13
301-500	10	0	0	0	0	0	0	0	0	10
501-900	4	0	0	0	0	0	0	0	0	4
NO INVERSION										3
TOTAL	27	0	0	0	1	0	0	0	0	31

---	TIME	601-1200 MST								TOTAL
001-100	0	0	2	1	0	0	0	0	0	3
101-300	1	3	9	6	1	0	0	0	0	20
301-500	0	0	0	1	0	0	0	0	0	1
501-900	1	0	0	0	0	0	0	0	0	1
NO INVERSION										3
TOTAL	2	3	11	8	3	0	1	0	0	31

---	TIME	1201-1800 MST								TOTAL
001-100	10	0	0	0	0	0	0	0	0	10
101-300	13	1	1	0	0	0	0	0	0	16
301-500	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0
NO INVERSION										4
TOTAL	23	1	1	1	0	0	1	0	0	31

---	TIME	1801-2400 MST								TOTAL
001-100	0	0	0	0	0	0	0	0	0	0
101-300	20	1	0	0	0	0	0	0	0	21
301-500	7	0	0	0	0	0	0	0	0	7
501-900	0	0	0	0	0	0	0	0	0	0
NO INVERSION										2
TOTAL	27	0	1	0	0	0	0	0	0	30

FREQUENCY SUMMARY FOR FIRST INVERSION

001-100	10	0	2	1	3	0	0	0	0	18
101-300	47	4	11	1	0	0	0	0	0	70
301-500	17	0	0	1	0	0	0	0	0	18
501-900	5	0	0	0	0	0	0	0	0	5
NO INVERSION										12
TOTAL	79	4	13	5	4	0	0	0	0	123



POPLAR RIVER UPPER AIR STUDY - SCUBBY MONTH OF OCTOBER 1978

\*\*\*\*\* TWO HOUR STABILITY ANALYSIS \*\*\*\*\*

DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	E	D	C	C	C	E	E	E	E
2	U	U	U	U	C	C	C	U	U	U	U	U
3	E	E	F	E	C	D	C	C	E	E	E	E
4	U	U	U	U	C	C	C	C	U	U	U	U
5	D	D	D	D	C	C	C	C	E	F	F	F
6	F	F	F	F	C	D	C	C	E	F	F	F
7	F	F	F	F	C	C	C	C	E	F	F	F
8	F	F	E	E	C	U	C	C	E	F	E	E
9	F	F	F	F	C	D	C	C	E	F	F	E
10	F	F	F	F	D	C	D	D	E	E	E	E
11	E	E	E	E	D	C	C	D	E	E	E	E
12	E	E	E	E	D	C	C	C	E	F	F	F
13	F	F	F	F	C	D	C	C	D	F	F	F
14	E	E	E	E	E	D	C	C	E	E	F	F
15	E	E	E	E	F	C	D	C	D	E	E	E
16	E	E	E	E	C	C	C	C	E	E	E	E
17	E	E	E	E	D	C	C	C	D	E	F	F
18	F	F	F	F	E	C	D	C	E	E	E	E
19	F	F	F	F	E	C	D	C	C	F	F	F
20	F	F	F	F	D	C	C	C	E	F	F	F
21	E	C	C	C	C	C	C	C	F	F	F	F
22	F	F	F	F	C	D	C	C	F	F	E	E
23	E	E	E	E	C	C	C	D	E	E	E	E
24	E	E	E	E	D	U	U	U	U	U	E	U
25	E	E	E	E	E	E	C	C	E	F	F	F
26	F	F	F	F	E	C	C	C	E	F	F	F
27	F	F	F	F	E	B	D	C	B	C	E	E
28	E	E	E	E	E	C	D	C	C	F	E	E
29	E	E	E	E	E	E	E	U	E	E	D	D
30	D	E	E	F	C	C	D	C	F	F	E	F
31	F	F	F	E	C	D	C	C	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY  
 A= 0.0 % B= 0.8 % C=22.3 % D=11.6 % E=34.7 % F=24.2 %  
 I= 6.5 % M= 0.0 %

NOTE: U=UNKNOWN MISSING DATA  
 CLOUD COVER CONDITIONS USED FROM NWS STATION AT GLASGOW  
 WIND DATA TAKEN AT SITE

POPLAR RIVER UPPER AIR STUDY - SCUBBY MONTH OF NOVEMBER 1978

\*\*\*\*\* FIRST INVERSION 0601-1200 MST 1201-1800 MST 1801-2400 MST \*\*\*\*\*

DAY	BASE TUP (100M) *	BASE TUP TYPE	BASE TUP (100M) *	BASE TUP TYPE	BASE TUP (100M) *	BASE TUP TYPE
1	0000	0000	0000	0000	0000	0000
2	0000	0000	0000	0000	0000	0000
3	0000	0000	0000	0000	0000	0000
4	0000	0000	0000	0000	0000	0000
5	0000	0000	0000	0000	0000	0000
6	0000	0000	0000	0000	0000	0000
7	0000	0000	0000	0000	0000	0000
8	0000	0000	0000	0000	0000	0000
9	0000	0000	0000	0000	0000	0000
10	0000	0000	0000	0000	0000	0000
11	0000	0000	0000	0000	0000	0000
12	0000	0000	0000	0000	0000	0000
13	0000	0000	0000	0000	0000	0000
14	0000	0000	0000	0000	0000	0000
15	0000	0000	0000	0000	0000	0000
16	0000	0000	0000	0000	0000	0000
17	0000	0000	0000	0000	0000	0000
18	0000	0000	0000	0000	0000	0000
19	0000	0000	0000	0000	0000	0000
20	0000	0000	0000	0000	0000	0000
21	0000	0000	0000	0000	0000	0000
22	0000	0000	0000	0000	0000	0000
23	0000	0000	0000	0000	0000	0000
24	0000	0000	0000	0000	0000	0000
25	0000	0000	0000	0000	0000	0000
26	0000	0000	0000	0000	0000	0000
27	0000	0000	0000	0000	0000	0000
28	0000	0000	0000	0000	0000	0000
29	0000	0000	0000	0000	0000	0000
30	0000	0000	0000	0000	0000	0000

\*\*\*\*\* SECOND INVERSION 0601-1200 MST 1201-1800 MST 1801-2400 MST \*\*\*\*\*

DAY	BASE TUP (100M) *	BASE TUP TYPE	BASE TUP (100M) *	BASE TUP TYPE	BASE TUP (100M) *	BASE TUP TYPE
1	0000	0000	0000	0000	0000	0000
2	0000	0000	0000	0000	0000	0000
3	0000	0000	0000	0000	0000	0000
4	0000	0000	0000	0000	0000	0000
5	0000	0000	0000	0000	0000	0000
6	0000	0000	0000	0000	0000	0000
7	0000	0000	0000	0000	0000	0000
8	0000	0000	0000	0000	0000	0000
9	0000	0000	0000	0000	0000	0000
10	0000	0000	0000	0000	0000	0000
11	0000	0000	0000	0000	0000	0000
12	0000	0000	0000	0000	0000	0000
13	0000	0000	0000	0000	0000	0000
14	0000	0000	0000	0000	0000	0000
15	0000	0000	0000	0000	0000	0000
16	0000	0000	0000	0000	0000	0000
17	0000	0000	0000	0000	0000	0000
18	0000	0000	0000	0000	0000	0000
19	0000	0000	0000	0000	0000	0000
20	0000	0000	0000	0000	0000	0000
21	0000	0000	0000	0000	0000	0000
22	0000	0000	0000	0000	0000	0000
23	0000	0000	0000	0000	0000	0000
24	0000	0000	0000	0000	0000	0000
25	0000	0000	0000	0000	0000	0000
26	0000	0000	0000	0000	0000	0000
27	0000	0000	0000	0000	0000	0000
28	0000	0000	0000	0000	0000	0000
29	0000	0000	0000	0000	0000	0000
30	0000	0000	0000	0000	0000	0000

NOTE: FOR IYP. 1=FRONTAL 2=SUBSIDIARY 3=RADIATION (SPIKED ECHO)  
 4=RADIATION (LAMINAR ECHO) 5=UNKNOWN  
 A=NO INVERSION MISSING DATE OR UNKNOWN

# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MCNTH: CF NOVEMBER 1978

\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS INVERSION BASE HEIGHT (IN METERS)

(METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---TIME 0-600 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 1

101-200 0 0 0 0 0 0 0 0 0 0 0

201-300 0 0 0 0 0 0 0 0 0 0 0

301-400 0 0 0 0 0 0 0 0 0 0 0

NO INVERSION 0 0 0 0 0 0 0 0 0 0 29

TOTAL 0 0 0 0 0 1 0 0 0 0 30

---TIME 601-1200 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 0

101-200 0 0 0 0 0 0 0 0 0 0 0

201-300 0 0 0 0 0 0 0 0 0 0 0

301-400 0 0 0 0 0 0 0 0 0 0 0

NO INVERSION 0 0 0 0 0 0 0 0 0 0 30

TOTAL 0 0 0 0 0 0 0 0 0 0 30

---TIME 1201-1800 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 1

101-200 0 0 0 0 0 0 0 0 0 0 0

201-300 0 0 0 0 0 0 0 0 0 0 0

301-400 0 0 0 0 0 0 0 0 0 0 0

NO INVERSION 0 0 0 0 0 0 0 0 0 0 29

TOTAL 0 0 0 0 0 1 0 0 0 0 30

---TIME 1801-2400 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 1

101-200 0 0 0 0 0 0 0 0 0 0 0

201-300 0 0 0 0 0 0 0 0 0 0 0

301-400 0 0 0 0 0 0 0 0 0 0 0

NO INVERSION 0 0 0 0 0 0 0 0 0 0 29

TOTAL 0 0 0 0 1 0 0 0 0 0 30

---TIME 1801-2400 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 1

101-200 0 0 0 0 0 0 0 0 0 0 0

201-300 0 0 0 0 0 0 0 0 0 0 0

301-400 0 0 0 0 0 0 0 0 0 0 0

NO INVERSION 0 0 0 0 0 0 0 0 0 0 29

TOTAL 0 0 0 0 1 0 0 0 0 0 30

---TIME 1801-2400 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 1

101-200 0 0 0 0 0 0 0 0 0 0 0

201-300 0 0 0 0 0 0 0 0 0 0 0

# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBEE MCNTH: CF NOVEMBER 1978

\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS INVERSION BASE HEIGHT (IN METERS)

(METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---TIME 0-600 MST ---

001-100 1 0 0 0 0 0 0 0 0 0 3

101-200 12 1 0 0 0 0 0 0 0 0 13

201-300 18 1 0 0 0 0 0 0 0 0 19

301-400 1 0 0 0 0 0 0 0 0 0 1

NO INVERSION 0 0 0 0 0 0 0 0 0 0 4

TOTAL 22 1 1 1 0 1 0 0 0 0 30

---TIME 601-1200 MST ---

001-100 0 0 0 0 0 0 0 0 0 0 1

101-200 0 3 1 0 0 0 0 0 0 0 15

201-300 5 2 0 0 0 0 0 0 0 0 22

301-400 2 0 0 0 0 0 0 0 0 0 6

NO INVERSION 0 0 0 0 0 0 0 0 0 0 0

TOTAL 13 4 3 3 1 0 0 0 0 0 30

---TIME 1201-1800 MST ---

001-100 1 0 2 0 0 0 0 0 0 0 7

101-200 9 2 0 0 0 0 0 0 0 0 8

201-300 9 0 0 0 0 0 0 0 0 0 9

301-400 1 0 0 0 0 0 0 0 0 0 1

NO INVERSION 0 0 0 0 0 0 0 0 0 0 5

TOTAL 17 2 2 3 0 1 0 0 0 0 30

---TIME 1801-2400 MST ---

001-100 2 0 0 0 0 0 0 0 0 0 3

101-200 10 1 0 0 0 0 0 0 0 0 13

201-300 8 1 0 0 0 0 0 0 0 0 12

301-400 1 0 0 0 0 0 0 0 0 0 1

NO INVERSION 0 0 0 0 0 0 0 0 0 0 5

TOTAL 21 2 0 2 0 0 0 0 0 0 30

---TIME 1801-2400 MST ---

001-100 4 0 2 0 0 0 0 0 0 0 14

101-200 34 5 4 0 0 0 0 0 0 0 48

201-300 30 3 0 0 0 0 0 0 0 0 33

301-400 5 0 0 0 0 0 0 0 0 0 5

NO INVERSION 0 0 0 0 0 0 0 0 0 0 20

TOTAL 73 9 6 9 1 2 0 0 0 0 120

---TIME 1801-2400 MST ---

001-100 4 0 2 0 0 0 0 0 0 0 14

101-200 34 5 4 0 0 0 0 0 0 0 48

201-300 30 3 0 0 0 0 0 0 0 0 33

## ACOUSTIC RACAR ANALYSIS

```
*****  
DAY  
0000-0000 MST TYPE  
BASE TOP  
(100M)(100M) *  
  
*****  
FIRST INVERSTUN  
0000-1200 MST TYPE  
BASE TOP  
(100M)(100M) *  
  
*****  
1201-1800 MST TYPE  
EASE ICP  
(100M)(100M) *  
  
*****  
1901-2400 MST TYPE  
EASE ICP  
(100M)(100M) *
```

[illegible][illegible]

```

ACTI: 1 1 FTYR 1=FRONTAL;2=SUBSIDENCE;3=FLATION (SPIKED FCHC)
      4=RAJATI(N(LAPINAF ECHC)=UNKNCYN
      N=0 1=MISSING 1-6 DE LANCAN

```



ACOUSTIC KALAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY SCUBEE MONTH OF DECEMBER 1978  
\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	31
NO INVERSION											
TOTAL	0	0	0	0	0	0	0	0	0	0	31
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	31
NO INVERSION											
TOTAL	0	0	0	0	0	0	0	0	0	0	31
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	31
NO INVERSION											
TOTAL	0	0	0	0	0	0	0	0	0	0	31
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	30
NO INVERSION											
TOTAL	0	0	0	1	0	0	0	0	0	0	31

FREQUENCY SUMMARY FOR SECOND INVERSION

001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	0	0	0	0	0	0	0	0	0	0	0
301-500	0	0	0	0	0	0	0	0	0	0	0
501-900	0	0	0	0	0	0	0	0	0	0	123
NO INVERSION											
TOTAL	0	0	0	1	0	0	0	0	0	0	124

ACOUSTIC KALAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCUBEE MONTH OF DECEMBER 1978  
\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS)	SFC	100	200	300	400	500	600	700	800	900	TOTAL
001-100	1	0	0	0	0	0	0	0	0	0	1
101-300	9	0	1	2	0	0	0	0	0	0	12
301-500	16	0	0	0	0	0	0	0	0	0	16
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											0
TOTAL	27	0	1	2	0	0	0	0	0	0	30
001-100	0	0	0	1	0	1	0	0	0	0	2
101-300	8	1	2	1	0	0	0	0	0	0	12
301-500	11	0	0	0	0	0	0	0	0	0	11
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											3
TOTAL	20	1	2	2	0	1	0	0	0	0	29
001-100	0	0	1	0	0	0	0	0	0	0	1
101-300	5	1	3	0	0	0	0	0	0	0	10
301-500	14	0	0	0	0	0	0	0	0	0	14
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											2
TOTAL	20	3	4	1	0	0	0	0	0	0	30
001-100	0	0	0	0	0	0	0	0	0	0	0
101-300	12	1	0	0	1	0	0	0	0	0	14
301-500	14	0	1	0	0	0	0	0	0	0	15
501-900	1	0	0	0	0	0	0	0	0	0	1
NO INVERSION											1
TOTAL	27	1	1	0	1	0	0	0	0	0	31

FREQUENCY SUMMARY FOR FIRST INVERSION

001-100	1	0	1	1	0	1	0	0	0	0	4
101-300	34	3	6	4	1	0	0	0	0	0	48
301-500	55	2	1	0	0	0	0	0	0	0	58
501-900	4	0	0	0	0	0	0	0	0	0	4
NO INVERSION											6
TOTAL	94	5	8	5	1	1	0	0	0	0	120

ACOUSTIC RADAR ANALYSIS

ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCUBEEY

MONTH OF JANUARY 1975

POPLAR RIVER UPPER AIR STUDY - SCUBEEY

MONTH OF DECEMBER 1976

\*\*\*\*\* FIRST INVERSION \*\*\*\*\*

DAY	0000-0600 MST BASE TOP (100M)(100M) #	0601-1200 MST BASE TOP (100M)(100M) #	1201-1800 MST BASE TOP (100M)(100M) #	1801-2400 MST BASE TOP (100M)(100M) #
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	0	0
30	0	0	0	0
31	0	0	0	0

\*\*\*\*\* SECOND INVERSION \*\*\*\*\*

DAY	0600-0600 MST BASE TOP (100M)(100M) #	0601-1200 MST BASE TOP (100M)(100M) #	1201-1800 MST BASE TOP (100M)(100M) #	1801-2400 MST BASE TOP (100M)(100M) #
1	0	0	0	0
2	0	0	0	0
3	0	0	0	0
4	0	0	0	0
5	0	0	0	0
6	0	0	0	0
7	0	0	0	0
8	0	0	0	0
9	0	0	0	0
10	0	0	0	0
11	0	0	0	0
12	0	0	0	0
13	0	0	0	0
14	0	0	0	0
15	0	0	0	0
16	0	0	0	0
17	0	0	0	0
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	0	0	0	0
22	0	0	0	0
23	0	0	0	0
24	0	0	0	0
25	0	0	0	0
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	0	0
30	0	0	0	0
31	0	0	0	0

NOTE: FOR TYPE 1=NO DATA=NO SUSPICION (SPIKE) 2=NO DATA=NO SUSPICION (SPIKE) 3=NO DATA=NO SUSPICION (SPIKE) 4=NO DATA=NO SUSPICION (SPIKE) 5=NO DATA=NO SUSPICION (SPIKE) 6=NO DATA=NO SUSPICION (SPIKE) 7=NO DATA=NO SUSPICION (SPIKE) 8=NO DATA=NO SUSPICION (SPIKE) 9=NO DATA=NO SUSPICION (SPIKE) 10=NO DATA=NO SUSPICION (SPIKE) 11=NO DATA=NO SUSPICION (SPIKE) 12=NO DATA=NO SUSPICION (SPIKE) 13=NO DATA=NO SUSPICION (SPIKE) 14=NO DATA=NO SUSPICION (SPIKE) 15=NO DATA=NO SUSPICION (SPIKE) 16=NO DATA=NO SUSPICION (SPIKE) 17=NO DATA=NO SUSPICION (SPIKE) 18=NO DATA=NO SUSPICION (SPIKE) 19=NO DATA=NO SUSPICION (SPIKE) 20=NO DATA=NO SUSPICION (SPIKE) 21=NO DATA=NO SUSPICION (SPIKE) 22=NO DATA=NO SUSPICION (SPIKE) 23=NO DATA=NO SUSPICION (SPIKE) 24=NO DATA=NO SUSPICION (SPIKE) 25=NO DATA=NO SUSPICION (SPIKE) 26=NO DATA=NO SUSPICION (SPIKE) 27=NO DATA=NO SUSPICION (SPIKE) 28=NO DATA=NO SUSPICION (SPIKE) 29=NO DATA=NO SUSPICION (SPIKE) 30=NO DATA=NO SUSPICION (SPIKE) 31=NO DATA=NO SUSPICION (SPIKE)

\*\*\*\*\* TML HOUR STABILITY ANALYSIS \*\*\*\*\*

DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	E	F	F	F	F	F	F	F	F	F	F	F
2	F	F	F	F	F	F	F	F	F	F	F	F
3	F	F	F	F	F	F	F	F	F	F	F	F
4	E	E	E	E	E	E	E	E	E	E	E	E
5	D	D	D	D	D	D	D	D	D	D	D	D
6	F	D	D	D	D	D	D	D	D	D	D	D
7	F	F	F	F	F	F	F	F	F	F	F	F
8	E	E	E	E	E	E	E	E	E	E	E	E
9	F	E	E	E	E	E	E	E	E	E	E	E
10	E	E	E	E	E	E	E	E	E	E	E	E
11	F	E	E	E	E	E	E	E	E	E	E	E
12	E	E	E	E	E	E	E	E	E	E	E	E
13	F	E	E	E	E	E	E	E	E	E	E	E
14	E	E	E	E	E	E	E	E	E	E	E	E
15	E	E	E	E	E	E	E	E	E	E	E	E
16	E	E	E	F	E	F	E	E	E	E	E	E
17	E	E	E	E	E	E	E	E	E	E	E	E
18	F	F	F	F	F	F	F	F	F	F	F	F
19	D	D	D	D	D	D	D	D	D	D	D	D
20	F	F	F	F	F	F	F	F	F	F	F	F
21	E	E	E	E	E	E	E	E	E	E	E	E
22	E	E	E	E	E	E	E	E	E	E	E	E
23	E	E	E	E	E	E	E	E	E	E	E	E
24	F	F	F	F	F	F	F	F	F	F	F	F
25	E	E	E	E	E	E	E	E	E	E	E	E
26	E	E	E	E	E	E	E	E	E	E	E	E
27	E	E	E	E	E	E	E	E	E	E	E	E
28	E	D	D	D	D	D	D	D	D	D	D	D
29	D	D	D	D	D	D	D	D	D	D	D	D
30	F	F	F	F	F	F	F	F	F	F	F	F
31	E	E	E	E	E	E	E	E	E	E	E	E

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY  
A= 0.0 % B= 0.3 % C= 3.5 % D=14.5 % E=63.2 % F=16.4 %  
U= 1.5 % W= 0.3 %

NOTE: U=UNKNOWN MISSING DATA  
C=NO COVER CONDITIONS USED FROM THIS STATION AT CLASSON  
H=NO DATA TAKEN AT SITE









# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOREY MCNTF CF MARCH 1979

DAY	0000-0600 MST BASE TOP TYPE (100M)(100M) *	0601-1200 MST BASE TOP TYPE (100M)(100M) *	1201-1800 MST BASE TOP TYPE (100M)(100M) *	1801-2400 MST BASE TOP TYPE (100M)(100M) *
1	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
2	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
3	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
4	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
5	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
6	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
7	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
8	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
9	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
10	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
11	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
12	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
13	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
14	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
15	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
16	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
17	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
18	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
19	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
20	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
21	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
22	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
23	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
24	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
25	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
26	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
27	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
28	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC

DAY	0000-0600 MST BASE TOP TYPE (100M)(100M) *	0601-1200 MST BASE TOP TYPE (100M)(100M) *	1201-1800 MST BASE TOP TYPE (100M)(100M) *	1801-2400 MST BASE TOP TYPE (100M)(100M) *
1	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
2	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
3	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
4	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
5	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
6	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
7	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
8	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
9	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
10	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
11	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
12	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
13	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
14	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
15	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
16	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
17	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
18	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
19	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
20	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
21	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
22	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
23	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
24	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
25	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
26	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
27	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC
28	CCCCCCCC	CCCCCCCC	CCCCCCCC	CCCCCCCC

NOTE: FOR TYPE 1=FRONTAL, 2=SUBSIDENCE, 3=RADIATION (SPIKED ECHO),  
4=RADIATION (PLAIN ECHO), 5=UNKNOWN  
A=NO INVERSION MISSING DATA OR UNKNOWN

# ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOREY MCNTF CF FEBRUARY 1979

DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	F	F	F	F	F	F	F	F	F	F	F	F
2	F	F	F	F	F	F	F	F	F	F	F	F
3	F	F	F	F	F	F	F	F	F	F	F	F
4	F	F	F	F	F	F	F	F	F	F	F	F
5	F	F	F	F	F	F	F	F	F	F	F	F
6	F	F	F	F	F	F	F	F	F	F	F	F
7	F	F	F	F	F	F	F	F	F	F	F	F
8	F	F	F	F	F	F	F	F	F	F	F	F
9	F	F	F	F	F	F	F	F	F	F	F	F
10	F	F	F	F	F	F	F	F	F	F	F	F
11	F	F	F	F	F	F	F	F	F	F	F	F
12	F	F	F	F	F	F	F	F	F	F	F	F
13	F	F	F	F	F	F	F	F	F	F	F	F
14	F	F	F	F	F	F	F	F	F	F	F	F
15	F	F	F	F	F	F	F	F	F	F	F	F
16	F	F	F	F	F	F	F	F	F	F	F	F
17	F	F	F	F	F	F	F	F	F	F	F	F
18	F	F	F	F	F	F	F	F	F	F	F	F
19	F	F	F	F	F	F	F	F	F	F	F	F
20	F	F	F	F	F	F	F	F	F	F	F	F
21	F	F	F	F	F	F	F	F	F	F	F	F
22	F	F	F	F	F	F	F	F	F	F	F	F
23	F	F	F	F	F	F	F	F	F	F	F	F
24	F	F	F	F	F	F	F	F	F	F	F	F
25	F	F	F	F	F	F	F	F	F	F	F	F
26	F	F	F	F	F	F	F	F	F	F	F	F
27	F	F	F	F	F	F	F	F	F	F	F	F
28	F	F	F	F	F	F	F	F	F	F	F	F

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A= 0.0 % B= 0.9 % C=11.0 % D=32.7 % E=43.5 % F=11.5 %  
G= 0.0 % H= 0.0 %

NOTE: U=UNKNOWN, M=MISSING DATA  
CLOUD COVER CUMULATIONS USED FROM AWS STATION AT GLASGOW  
AND DATA TAKEN AT SITE



ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBAY MCNTH CF MARCH 1979

\*\*\*\*\* FIRST INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---TIME 0- 600 MST ---

CGI-1CC 0 0 0 0 0 0 0 0 0 0  
101-300 4 0 2 3 0 0 0 0 0 9  
301-500 9 1 1 1 0 0 0 0 0 14  
501-900 4 0 0 0 0 0 0 0 0 4  
NO INVERSION  
TOTAL 17 1 4 4 1 0 0 0 0 31

---TIME 601-1200 MST ---

CGI-1CC 0 0 1 2 0 0 0 0 0 3  
101-300 2 0 1 1 0 0 0 0 0 10  
301-500 7 1 2 0 0 0 0 0 0 11  
501-900 3 0 0 0 0 0 0 0 0 3  
NO INVERSION  
TOTAL 12 1 4 3 5 2 0 0 0 31

---TIME 1201-1800 MST ---

CGI-1CC 0 0 0 0 0 0 1 0 0 2  
101-300 3 1 0 0 0 0 0 0 0 10  
301-500 6 1 0 0 0 0 0 0 0 18  
501-900 4 0 0 0 0 0 0 0 0 4  
NO INVERSION  
TOTAL 13 1 1 0 3 2 3 1 0 31

---TIME 1801-2400 MST ---

CGI-1CC 0 0 0 0 0 0 0 1 0 1  
101-300 3 2 0 2 0 0 0 0 0 15  
301-500 11 0 0 1 0 0 0 0 0 15  
501-900 3 0 0 0 0 0 0 0 0 3  
NO INVERSION  
TOTAL 17 2 2 3 0 1 0 1 0 31

--- FREQUENCY SUMMARY FOR FIRST INVERSION ---

CGI-1CC 0 0 1 2 0 0 1 1 0 6  
101-300 12 0 6 7 4 1 0 0 0 37  
301-500 33 5 4 2 0 0 0 0 0 47  
501-900 14 0 0 0 0 0 0 0 0 14  
NO INVERSION  
TOTAL 59 5 11 10 9 5 3 1 1 124

ACOUSTIC RADAR ANALYSIS

POPLAR RIVER UPPER AIR STUDY - SCOBAY MCNTH CF MARCH 1979

\*\*\*\*\* SECOND INVERSION FREQUENCY OF OCCURENCE TABLE \*\*\*\*\*

THICKNESS (METERS) SFC 100 200 300 400 500 600 700 800 900 TOTAL

---TIME 0- 600 MST ---

CGI-1CC 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0

---TIME 601-1200 MST ---

CGI-1CC 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0

---TIME 1201-1800 MST ---

CGI-1CC 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0

---TIME 1801-2400 MST ---

CGI-1CC 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0

--- FREQUENCY SUMMARY FOR SECOND INVERSION ---

CGI-1CC 0 0 0 0 0 0 0 0 0 0  
101-300 0 0 0 0 0 0 0 0 0 0  
301-500 0 0 0 0 0 0 0 0 0 0  
501-900 0 0 0 0 0 0 0 0 0 0  
NO INVERSION  
TOTAL 0 0 0 0 0 0 0 0 0 0

\*\*\*\*\* TWO HOUR STABILITY ANALYSIS \*\*\*\*\*

DAY	02	04	06	08	10	12	14	16	18	20	22	24
1	E	E	E	E	E	E	B	C	D	D	D	D
2	E	E	E	E	E	E	F	F	F	F	E	E
3	F	F	F	F	F	F	F	F	F	F	F	F
4	F	F	F	F	F	F	E	E	E	E	F	E
5	E	E	F	E	E	E	E	E	E	E	F	E
6	F	F	F	E	E	E	F	E	E	E	E	E
7	E	E	E	E	E	E	E	E	E	E	U	U
8	D	D	D	D	D	D	C	C	C	D	D	D
9	D	D	D	D	C	C	C	C	C	E	E	E
10	F	F	F	F	E	E	E	E	E	E	F	F
11	F	F	F	F	F	F	F	F	F	F	F	F
12	E	E	E	E	E	E	E	U	U	U	U	U
13	C	D	E	D	C	C	C	C	E	E	E	E
14	E	E	D	D	C	B	C	C	C	E	F	F
15	F	F	F	F	E	E	E	F	F	F	E	F
16	F	F	F	E	E	E	E	E	E	F	F	F
17	F	E	D	D	C	C	C	C	C	E	E	E
18	E	E	E	D	C	C	C	C	C	C	D	D
19	D	D	D	E	E	C	C	C	C	E	E	D
20	C	D	D	D	C	C	C	C	C	D	D	D
21	D	D	F	E	C	B	B	D	B	F	F	F
22	F	E	E	E	C	C	C	D	D	D	D	D
23	C	D	D	B	B	C	D	E	F	F	F	F
24	F	F	F	E	D	C	C	E	E	E	C	C
25	D	D	U	D	C	C	C	C	C	C	C	C
26	C	C	B	C	C	C	C	C	C	C	C	C
27	D	D	D	D	C	D	C	E	E	E	E	E
28	E	E	E	E	C	C	C	C	D	E	E	E
29	E	E	E	E	E	C	C	D	C	F	E	E
30	E	F	F	E	D	C	C	C	C	E	E	E
31	E	D	C	C	C	C	C	C	C	D	D	D

PERCENT FREQUENCY OF OCCURENCE FOR EACH CATEGORY

A = 0.0 % B = 2.2 % C = 21.0 % D = 19.5 % E = 34.1 % F = 21.0 %  
U = 1.5 % M = 0.0 %

NOTE: UNKNOWN MISSING DATA  
CLOUD COVER CONDITIONS USED FROM AWS STATION AT GLASGOW  
WIND DATA TAKEN AT SITE

# MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBEE AREA: POPLAR RIVER SITE: ECRDER STA DATE: MAR 1977

WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.10	0.44	347
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.35	0.51	345
DIFFUSE SKY IRRADIANCE	0.0	0.55	0.19	345
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.60	345
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.73	0.32	286
FRAC TRANS TOTAL SOLAR POSS	0.02	1.87	0.62	286
FRAC DIFFUSE OF TOTAL POSS	0.0	1.63	0.30	286
RELATIVE AIR MASS	0.0	14.57	3.51	357
EXT. CCEF. (BASE E)	0.10	3.53	0.64	286

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.65	132
CLOUD COVER (>1/10)	0.40	140
CIRRUS	0.48	14

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	3.79	181
CLOUD COVER (>1/10)	3.25	162
CIRRUS	3.04	14

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	0.86	132
CLOUD COVER (>1/10)	0.46	140
CIRRUS	0.48	14

LINEAR REGRESSION: I = 0.920 \* TH + 0.045

RELATIVE ERROR OF REGRESSION = 0.201

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
 CITY: SCOBEY AREA: POPLAR RIVER SITE: ECRDER STA DATE: APR 1977  
 WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.21	0.57	405
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.37	0.62	405
DIFFUSE SKY IRRADIANCE	0.0	0.85	0.21	405
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.50	405
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.70	0.36	351
FRAC TRANS TOTAL SOLAR POSS	0.03	1.02	0.60	351
FRAC DIFFUSE OF TOTAL POSS	0.0	0.90	0.24	351
RELATIVE AIR MASS	0.0	14.50	2.50	393
EXT. COEF. (BASE E)	0.13	4.08	0.68	351

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.42	163
CLOUD COVER (>1/10)	0.43	179
CIRRUS	0.47	9

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	3.03	192
CLOUD COVER (>1/10)	2.74	191
CIRRUS	3.47	10

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	0.75	163
CLOUD COVER (>1/10)	0.63	179
CIRRUS	0.34	9

LINEAR REGRESSION:  $I = 1.557 * TH + -0.222$   
 RELATIVE ERROR OF REGRESSION= -0.422

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
 CITY: SCOBEY AREA: POPLAR RIVER SITE: ECRDER STA DATE: MAY 1977  
 WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.31	0.54	280
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.37	0.48	259
DIFFUSE SKY IRRADIANCE	0.0	0.66	0.22	254
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.59	254
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.69	0.29	212
FRAC TRANS TOTAL SOLAR POSS	0.04	1.21	0.54	212
FRAC DIFFUSE OF TOTAL POSS	0.0	1.15	0.25	212
RELATIVE AIR MASS	1.12	14.58	3.13	465
EXT. COEF. (BASE E)	0.11	4.60	0.94	212

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.70	53
CLOUD COVER (>1/10)	0.46	152
CIRRUS	0.27	7

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	3.37	159
CLOUD COVER (>1/10)	2.95	293
CIRRUS	4.16	13

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	1.55	53
CLOUD COVER (>1/10)	0.74	152
CIRRUS	0.55	7

LINEAR REGRESSION:  $I = 1.484 * TH + -0.216$   
 RELATIVE ERROR OF REGRESSION= -0.485



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: JUL 1977

WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	1.21	0.58	459
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.35	0.60	441
DIFFUSE SKY IRRADIANCE	0.0	0.68	0.19	437
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.48	437
FRAC TRANS DIRECT SOLAR BEAM	0.00	0.67	0.23	389
FRAC TRANS TOTAL SOLAR POSS	0.05	0.86	0.52	389
FRAC DIFFUSE OF TOTAL POSS	0.0	0.70	0.19	389
RELATIVE AIR MASS	0.0	13.97	2.78	465
EXT. COEF. (BASE E)	0.11	4.74	0.86	389

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

NC-HOURS

CLOUD FREE	0.50	119
CLOUD COVER (>1/10)	0.38	259
CIRRUS	0.25	11

AVERAGE AIR MASS

NO-HOURS

CLOUD FREE	2.77	158
CLOUD COVER (>1/10)	2.85	295
CIRRUS	1.21	12

AVERAGE EXT. COEF. NC-HOURS

CLOUD FREE	1.21	119
CLOUD COVER (>1/10)	0.70	259
CIRRUS	0.91	11

LINEAR REGRESSION: I= 1.754 \* TH + -0.239

RELATIVE ERROR OF REGRESSION= -0.466

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: JUN 1977

WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	1.33	0.57	452
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.34	0.50	411
DIFFUSE SKY IRRADIANCE	0.0	0.85	0.23	403
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.56	403
FRAC TRANS DIRECT SOLAR BEAM	0.00	0.67	0.30	334
FRAC TRANS TOTAL SOLAR POSS	0.04	0.78	0.52	334
FRAC DIFFUSE OF TOTAL POSS	0.0	0.65	0.22	334
RELATIVE AIR MASS	0.0	7.70	2.46	450
EXT. COEF. (BASE E)	0.18	4.67	0.56	334

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

NC-HOURS

CLOUD FREE	0.53	133
CLOUD COVER (>1/10)	0.44	201
CIRRUS	0.0	0

AVERAGE AIR MASS

NC-HOURS

CLOUD FREE	2.48	190
CLOUD COVER (>1/10)	2.44	260
CIRRUS	0.0	0

AVERAGE EXT. COEF. NC-HOURS

CLOUD FREE	1.20	133
CLOUD COVER (>1/10)	0.80	201
CIRRUS	0.0	0

LINEAR REGRESSION: I= 1.720 \* TH + -0.291

RELATIVE ERROR OF REGRESSION= -0.531

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: SEP 1977  
WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.04	0.34	361
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.30	0.33	274
DIFFUSE SKY IRRADIANCE	0.0	0.56	0.16	260
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.67	260
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.66	0.28	159
FRAC TRANS TOTAL SOLAR POSS	0.07	1.67	0.52	159
FRAC DIFFUSE OF TOTAL POSS	0.0	1.54	0.25	159
RELATIVE AIR MASS	0.0	14.57	3.36	365
EXT. COEF. (BASE E)	0.08	3.50	0.83	159

AVERAGE RATIO OF DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	61
CLOUD COVER (>1/10)	95
CIRRUS	3

AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	177
CLOUD COVER (>1/10)	183
CIRRUS	5

AVERAGE EXT. COEF.

	NO. HOURS
CLOUD FREE	61
CLOUD COVER (>1/10)	95
CIRRUS	3

LINEAR REGRESSION:  $I = 0.963 * TH + 0.040$   
RELATIVE ERROR OF REGRESSION = 0.153

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: AUG 1977  
WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.18	0.46	429
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.34	0.56	256
DIFFUSE SKY IRRADIANCE	0.0	0.65	0.19	256
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.49	256
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.67	0.33	218
FRAC TRANS TOTAL SOLAR POSS	0.08	1.23	0.53	218
FRAC DIFFUSE OF TOTAL POSS	0.0	0.88	0.21	218
RELATIVE AIR MASS	0.0	14.58	2.94	426
EXT. COEF. (BASE E)	0.08	4.51	0.86	218

AVERAGE RATIO OF DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	107
CLOUD COVER (>1/10)	104
CIRRUS	7

AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	218
CLOUD COVER (>1/10)	200
CIRRUS	8

AVERAGE EXT. COEF.

	NO. HOURS
CLOUD FREE	107
CLOUD COVER (>1/10)	104
CIRRUS	7

LINEAR REGRESSION:  $I = 1.453 * TH + 0.114$   
RELATIVE ERROR OF REGRESSION = -0.305

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: NOV 1977  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.63	0.26	271
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.31	0.53	274
DIFFUSE SKY IRRADIANCE	0.0	0.35	0.11	271
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.57	271
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.69	0.37	200
FRAC TRANS TOTAL SOLAR POSS	0.08	1.93	0.64	200
FRAC DIFFUSE OF TOTAL POSS	0.0	1.62	0.27	200
RELATIVE AIR MASS	0.0	14.58	4.89	258
EXT. COEF. (BASE E)	0.06	1.77	0.35	200

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.50	88
CLOUD COVER (>1/10)	0.38	99
CIRRUS	0.48	8

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	4.65	123
CLOUD COVER (>1/10)	5.02	116
CIRRUS	5.76	8

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	0.41	88
CLOUD COVER (>1/10)	0.30	99
CIRRUS	0.21	8

LINEAR REGRESSION:  $I = 0.926 * TH + 0.114$   
RELATIVE ERROR OF REGRESSION = 0.543

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: OCT 1977  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.86	0.35	328
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.31	0.54	292
DIFFUSE SKY IRRADIANCE	0.0	0.45	0.13	292
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.55	292
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.68	0.34	241
FRAC TRANS TOTAL SOLAR POSS	0.05	2.08	0.57	241
FRAC DIFFUSE OF TOTAL POSS	0.0	1.87	0.24	241
RELATIVE AIR MASS	0.0	14.58	3.95	321
EXT. COEF. (BASE E)	0.08	2.88	0.53	241

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.51	119
CLOUD COVER (>1/10)	0.42	113
CIRRUS	0.26	5

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	3.83	166
CLOUD COVER (>1/10)	4.17	141
CIRRUS	3.16	12

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	0.64	119
CLOUD COVER (>1/10)	0.42	113
CIRRUS	0.31	5

LINEAR REGRESSION:  $I = 0.967 * TH + 0.097$   
RELATIVE ERROR OF REGRESSION = 0.392



MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: DEC 1977  
WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.53	0.19	250
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.12	0.19	233
DIFFUSE SKY IRRADIANCE	0.0	0.33	0.14	233
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.81	233
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.60	0.20	117
FRAC TRANS TOTAL SOLAR POSS	0.17	1.26	0.59	117
FRAC DIFFUSE OF TOTAL POSS	0.04	0.80	0.39	117
RELATIVE AIR MASS	0.0	14.57	4.99	225
EXT. COEF. (BASE E)	0.08	1.63	0.59	117

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	55
CLOUD COVER (>1/10)	58
CIRRUS	4

AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	130
CLOUD COVER (>1/10)	90
CIRRUS	5

AVERAGE EXT. COEF. NO. HOURS

	NO. HOURS
CLOUD FREE	55
CLOUD COVER (>1/10)	58
CIRRUS	4

LINEAR REGRESSION:  $I = 1.077 * TH + -0.267$   
RELATIVE ERROR OF REGRESSION= -0.628

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: JAN 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.69	0.25	270
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.32	0.45	272
DIFFUSE SKY IRRADIANCE	0.0	0.39	0.13	270
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.65	270
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.70	0.36	183
FRAC TRANS TOTAL SOLAR POSS	0.14	2.20	0.68	183
FRAC DIFFUSE OF TOTAL POSS	0.0	1.78	0.33	183
RELATIVE AIR MASS	0.0	14.58	5.10	254
EXT. COEF. (BASE E)	0.06	1.90	0.41	183

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	120
CLOUD COVER (>1/10)	61
CIRRUS	2

AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	180
CLOUD COVER (>1/10)	70
CIRRUS	4

AVERAGE EXT. COEF. NO. HOURS

	NO. HOURS
CLOUD FREE	120
CLOUD COVER (>1/10)	61
CIRRUS	2

LINEAR REGRESSION:  $I = 0.999 * TH + -0.016$   
RELATIVE ERROR OF REGRESSION= -0.111

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBEE

AREA: POPLAR RIVER

SITE: EORDER STA

DATE: MAR 1978

WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC.HOURS
INCIDENT SOLAR RADIATION	0.0	1.04	0.44	366
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.35	0.46	366
DIFFUSE SKY IRRADIANCE	0.0	0.67	0.22	366
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.63	366
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.72	0.31	282
FRAC TRANS TOTAL SOLAR POSS	0.07	1.67	0.61	282
FRAC DIFFUSE OF TOTAL POSS	0.0	1.52	0.30	282
RELATIVE AIR MASS	0.0	14.55	3.54	358
EXT. COEF. (BASE E)	0.06	3.18	0.70	282

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC. HOURS
--	--------------------------------------	--------------

CLOUD FREE	0.58	170
CLOUD COVER (>1/10)	0.48	98
CIRRUS	0.43	14

	AVERAGE AIR MASS	NO.HOURS
--	------------------	----------

CLOUD FREE	3.40	223
CLOUD COVER (>1/10)	3.75	116
CIRRUS	3.75	17

	AVERAGE EXT. COEF.	NC.HOURS
--	--------------------	----------

CLOUD FREE	0.61	170
CLOUD COVER (>1/10)	0.56	98
CIRRUS	0.39	14

LINEAR REGRESSION:  $I = 1.169 * TH + -0.123$ 

RELATIVE ERROR OF REGRESSION= -0.347

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBEE

AREA: POPLAR RIVER

SITE: EORDER STA

DATE: FEB 1978

WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC.HOURS
INCIDENT SOLAR RADIATION	0.0	0.97	0.35	266
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.35	0.36	262
DIFFUSE SKY IRRADIANCE	0.0	0.61	0.22	257
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.72	257
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.71	0.28	177
FRAC TRANS TOTAL SOLAR POSS	0.08	1.54	0.66	177
FRAC DIFFUSE OF TOTAL POSS	0.0	1.29	0.38	177
RELATIVE AIR MASS	0.0	14.57	4.16	271
EXT. COEF. (BASE E)	0.07	2.66	0.66	177

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC. HOURS
--	--------------------------------------	--------------

CLOUD FREE	0.67	113
CLOUD COVER (>1/10)	0.54	55
CIRRUS	0.38	9

	AVERAGE AIR MASS	NO.HOURS
--	------------------	----------

CLOUD FREE	4.13	191
CLOUD COVER (>1/10)	4.47	71
CIRRUS	2.33	5

	AVERAGE EXT. COEF.	NC.HOURS
--	--------------------	----------

CLOUD FREE	0.74	113
CLOUD COVER (>1/10)	0.54	55
CIRRUS	0.45	9

LINEAR REGRESSION:  $I = 1.066 * TH + -0.167$ 

RELATIVE ERROR OF REGRESSION= -0.433

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SOBEBY AREA: POPLAR RIVER SITE: BORDER STA DATE: APR 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.15	0.37	362
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.35	0.32	362
DIFFUSE SKY IRRADIANCE	0.0	0.66	0.20	361
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.70	361
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.71	0.28	213
FRAC TRANS TOTAL SOLAR POSS	0.06	1.10	0.52	213
FRAC DIFFUSE OF TOTAL POSS	0.0	0.70	0.24	213
RELATIVE AIR MASS	0.0	14.57	2.90	393
EXT. COEF. (BASE E)	0.09	4.14	1.04	213

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	88
CLOUD COVER (>1/10)	113
CIRRUS	12

## AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	230
CLOUD COVER (>1/10)	151
CIRRUS	12

## AVERAGE EXT. COEF. NO. HOURS

	NO. HOURS
CLOUD FREE	88
CLOUD COVER (>1/10)	113
CIRRUS	12

LINEAR REGRESSION:  $I = 1.713 * TH + -0.346$   
RELATIVE ERROR OF REGRESSION = -0.614

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SOBEBY AREA: POPLAR RIVER SITE: BORDER STA DATE: MAY 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.25	0.47	459
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	2.16	0.45	452
DIFFUSE SKY IRRADIANCE	0.0	0.76	0.18	452
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.59	452
FRAC TRANS DIRECT SOLAR BEAM	0.01	1.09	0.31	325
FRAC TRANS TOTAL SOLAR POSS	0.06	1.37	0.51	325
FRAC DIFFUSE OF TOTAL POSS	0.0	1.09	0.20	325
RELATIVE AIR MASS	1.12	14.57	3.14	465
EXT. COEF. (BASE E)	-0.06	4.41	0.90	325

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	135
CLOUD COVER (>1/10)	182
CIRRUS	8

## AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	246
CLOUD COVER (>1/10)	209
CIRRUS	10

## AVERAGE EXT. COEF. NO. HOURS

	NO. HOURS
CLOUD FREE	135
CLOUD COVER (>1/10)	182
CIRRUS	8

LINEAR REGRESSION:  $I = 1.593 * TH + -0.195$   
RELATIVE ERROR OF REGRESSION = -0.436



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY AREA: POPLAR RIVER SITE: BORDER STA DATE: JUL 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.24	0.57	468
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.31	0.64	473
DIFFUSE SKY IRRADIANCE	0.0	0.68	0.17	468
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.41	468
FRAC TRANS DIRECT SOLAR BEAM	0.00	0.65	0.36	413
FRAC TRANS TOTAL SOLAR POSS	0.05	0.84	0.51	413
FRAC DIFFUSE OF TOTAL POSS	0.0	0.50	0.16	413
RELATIVE AIR MASS	0.0	14.15	2.78	465
EXT. COEF. (BASE E)	0.12	3.79	0.67	413

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.31	127
CLOUD COVER (>1/10)	0.34	282
CIRRUS	0.60	4

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	2.98	159
CLOUD COVER (>1/10)	2.67	302
CIRRUS	3.06	4

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	0.68	127
CLOUD COVER (>1/10)	0.66	282
CIRRUS	1.05	4

LINEAR REGRESSION:  $I = 1.724 * TH + -0.157$   
RELATIVE ERROR OF REGRESSION = -0.342

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY AREA: POPLAR RIVER SITE: ECRDER STA DATE: JUN 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.61	0.23	246
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.30	0.33	247
DIFFUSE SKY IRRADIANCE	0.0	0.35	0.15	246
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.77	246
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.65	0.27	161
FRAC TRANS TOTAL SOLAR POSS	0.15	1.76	0.72	161
FRAC DIFFUSE OF TOTAL POSS	0.0	1.27	0.45	161
RELATIVE AIR MASS	0.0	13.97	5.63	237
EXT. COEF. (BASE E)	0.05	1.45	0.48	161

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.61	65
CLOUD COVER (>1/10)	0.68	80
CIRRUS	0.68	5

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	5.77	105
CLOUD COVER (>1/10)	5.55	115
CIRRUS	4.77	6

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	0.41	65
CLOUD COVER (>1/10)	0.53	80
CIRRUS	0.61	5

LINEAR REGRESSION:  $I = 0.801 * TH + -0.076$   
RELATIVE ERROR OF REGRESSION = -0.265

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBEY AREA: POPLAR RIVER SITE: BORDER STA DATE: AUG 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.28	0.55	416
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.36	0.69	416
DIFFUSE SKY IRRADIANCE	0.0	0.77	0.16	416
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.39	416
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.68	0.38	379
FRAC TRANS TOTAL SOLAR POSS	0.09	1.22	0.55	379
FRAC DIFFUSE OF TOTAL POSS	0.0	0.95	0.17	379
RELATIVE AIR MASS	0.0	14.57	2.93	427
EXT. COEF. (BASE E)	0.09	3.84	0.63	379

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	149
CLOUD COVER (>1/10)	217
CIRRUS	13

AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	180
CLOUD COVER (>1/10)	234
CIRRUS	13

AVERAGE EXT. COEF. NO. HOURS

	NO. HOURS
CLOUD FREE	149
CLOUD COVER (>1/10)	217
CIRRUS	13

LINEAR REGRESSION:  $I = 1.534 * TM + -0.087$   
RELATIVE ERROR OF REGRESSION = -0.227

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBEY AREA: POPLAR RIVER SITE: BORDER STA DATE: SEP 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.10	0.47	363
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.35	0.63	364
DIFFUSE SKY IRRADIANCE	0.0	0.84	0.16	363
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.43	363
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.65	0.48	242
FRAC TRANS TOTAL SOLAR POSS	0.10	1.86	0.69	243
FRAC DIFFUSE OF TOTAL POSS	0.0	1.45	0.22	243
RELATIVE AIR MASS	0.0	14.51	3.41	367
EXT. COEF. (BASE E)	0.06	3.01	0.38	243

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

	NO. HOURS
CLOUD FREE	103
CLOUD COVER (>1/10)	136
CIRRUS	4

AVERAGE AIR MASS

	NO. HOURS
CLOUD FREE	194
CLOUD COVER (>1/10)	166
CIRRUS	7

AVERAGE EXT. COEF. NO. HOURS

	NO. HOURS
CLOUD FREE	103
CLOUD COVER (>1/10)	136
CIRRUS	4

LINEAR REGRESSION:  $I = 0.353 * TM + 0.703$   
RELATIVE ERROR OF REGRESSION = -3.244

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCODEY AREA: POPLAR RIVER SITE: ECRDER STA DATE: NOV 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.70	0.25	263
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.24	0.31	267
DIFFLUSE SKY IRRADIANCE	0.0	0.44	0.16	263
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.71	263
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.65	0.27	159
FRAC TRANS TOTAL SOLAR POSS	0.09	2.25	0.69	159
FRAC DIFFUSE OF TOTAL POSS	0.0	2.13	0.42	159
RELATIVE AIR MASS	0.0	14.58	4.64	253
EXT. COEF. (BASE E)	0.05	2.05	0.51	159

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC- HOURS
CLOUD FREE	0.65	118
CLOUD COVER (>1/10)	0.45	37
CIRRUS	0.73	4

	AVERAGE AIR MASS	NC-HOURS
CLOUD FREE	4.61	202
CLOUD COVER (>1/10)	4.87	46
CIRRUS	3.89	5

	AVERAGE EXT. COEF.	NC-HOURS
CLOUD FREE	0.56	118
CLOUD COVER (>1/10)	0.31	37
CIRRUS	0.83	4

LINEAR REGRESSION: I= 0.510 \* TH + 0.170  
RELATIVE ERROR OF REGRESSION= 2.156

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCODEY AREA: POPLAR RIVER SITE: ECRDER STA DATE: OCT 1978  
WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	1.01	0.38	327
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.31	0.55	327
DIFFLUSE SKY IRRADIANCE	0.0	0.72	0.16	327
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.52	327
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.68	0.38	242
FRAC TRANS TOTAL SOLAR POSS	0.07	2.35	0.67	242
FRAC DIFFUSE OF TOTAL POSS	0.0	2.18	0.30	242
RELATIVE AIR MASS	0.0	14.51	3.82	317
EXT. COEF. (BASE E)	0.06	2.65	0.47	242

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC- HOURS
CLOUD FREE	0.41	147
CLOUD COVER (>1/10)	0.42	87
CIRRUS	0.41	8

	AVERAGE AIR MASS	NC-HOURS
CLOUD FREE	3.60	195
CLOUD COVER (>1/10)	4.03	112
CIRRUS	5.77	10

	AVERAGE EXT. COEF.	NC-HOURS
CLOUD FREE	0.51	147
CLOUD COVER (>1/10)	0.40	87
CIRRUS	0.44	8

LINEAR REGRESSION: I= 0.479 \* TH + 0.414  
RELATIVE ERROR OF REGRESSION= -17.042



MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
 CITY: SPOREY AREA: POPLAR RIVER SITE: ELDER STA DATE: DEC 1978  
 WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC.HOURS
INCIDENT SOLAR RADIATION	0.0	0.61	0.23	246
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.20	0.33	247
DIFFUSE SKY IRRADIANCE	0.0	0.25	0.15	246
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.77	246
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.65	0.27	161
FRAC TRANS TOTAL SOLAR POSS	0.15	1.76	0.72	161
FRAC DIFFUSE OF TOTAL POSS	0.0	1.27	0.45	161
RELATIVE AIR MASS	0.0	13.57	5.63	237
EXT. COEF. (BASE E)	0.05	1.45	0.48	161

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC. HOURS
CLOUD FREE	0.70	76
CLOUD COVER (>1/10)	0.61	82
CIRRUS	0.60	3
AVERAGE AIR MASS		NC.HOURS
CLOUD FREE	5.57	136
CLOUD COVER (>1/10)	5.77	98
CIRRUS	3.70	3
AVERAGE EXT. COEF.		NC.HOURS
CLOUD FREE	0.54	76
CLOUD COVER (>1/10)	0.43	82
CIRRUS	0.35	3

LINEAR REGRESSION:  $I = 0.801 * TH + -0.076$   
 RELATIVE ERROR OF REGRESSION = -0.285

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
 CITY: SPOREY AREA: POPLAR RIVER SITE: ELDER STA DATE: JAN 1979  
 WAVELENGTH: 0.3 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC.HOURS
INCIDENT SOLAR RADIATION	0.0	0.67	0.27	276
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.27	0.39	275
DIFFUSE SKY IRRADIANCE	0.0	0.45	0.17	275
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.74	275
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.68	0.28	197
FRAC TRANS TOTAL SOLAR POSS	0.12	2.76	0.77	197
FRAC DIFFUSE OF TOTAL POSS	0.0	2.50	0.49	197
RELATIVE AIR MASS	0.0	14.58	5.22	252
EXT. COEF. (BASE E)	0.06	1.58	0.47	197

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC. HOURS
CLOUD FREE	0.61	104
CLOUD COVER (>1/10)	0.70	90
CIRRUS	0.94	3
AVERAGE AIR MASS		NC.HOURS
CLOUD FREE	5.08	127
CLOUD COVER (>1/10)	5.38	118
CIRRUS	5.05	8
AVERAGE EXT. COEF.		NC.HOURS
CLOUD FREE	0.45	104
CLOUD COVER (>1/10)	0.47	90
CIRRUS	1.14	3

LINEAR REGRESSION:  $I = 0.522 * TH + 0.123$   
 RELATIVE ERROR OF REGRESSION = 0.605

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SPOREY

AREA: POPLAR RIVER

SITE: ECRDER STA

DATE: MAR 1979

WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	1.15	0.44	263
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.36	0.42	288
DIFFUSE SKY IRRADIANCE	0.0	0.95	0.22	288
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.71	288
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.71	0.36	166
FRAC TRANS TOTAL SOLAR BEAM	0.06	2.35	0.72	166
FRAC DIFFUSE OF TOTAL BEAM	0.0	1.87	0.34	166
RELATIVE AIR MASS	0.0	14.57	3.46	253
EXT. CCEF. (BASE E)	0.08	3.22	0.60	166

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.58	76
CLOUD COVER (>1/10)	0.45	85
CIRRUS	0.48	5

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	3.62	165
CLOUD COVER (>1/10)	3.35	172
CIRRUS	2.83	12

	AVERAGE EXT. CCEF. NO. HOURS
CLOUD FREE	0.70 76
CLOUD COVER (>1/10)	0.51 85
CIRRUS	0.35 5

LINEAR REGRESSION:  $I = 0.907 * TH + 0.075$   
RELATIVE ERROR OF REGRESSION= 0.202

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SPOREY

AREA: POPLAR RIVER

SITE: ECRDER STA

DATE: FEB 1979

WAVELENGTH: 0.3 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.55	0.36	277
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.32	0.25	264
DIFFUSE SKY IRRADIANCE	0.0	0.56	0.23	263
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.75	263
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.70	0.32	151
FRAC TRANS TOTAL SOLAR BEAM	0.16	3.15	0.76	151
FRAC DIFFUSE OF TOTAL BEAM	0.0	3.03	0.46	151
RELATIVE AIR MASS	0.0	14.56	4.12	267
EXT. CCEF. (BASE E)	0.08	2.44	0.55	151

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.64	90
CLOUD COVER (>1/10)	0.53	54
CIRRUS	0.27	7

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	4.00	173
CLOUD COVER (>1/10)	4.52	85
CIRRUS	2.77	5

	AVERAGE EXT. CCEF. NO. HOURS
CLOUD FREE	0.65 90
CLOUD COVER (>1/10)	0.43 54
CIRRUS	0.30 7

LINEAR REGRESSION:  $I = 0.223 * TH + 0.428$   
RELATIVE ERROR OF REGRESSION= -1.952

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY

AREA: POPLAR RIVER

SITE: BORDER STA

DATE: AUG 1978

WAVELENGTH: 0.3 - 0.7 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.67	0.27	202
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.68	0.31	202
DIFFUSE SKY IRRADIANCE	0.0	0.29	0.10	202
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.48	202
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.34	0.18	176
FRAC TRANS TOTAL SOLAR POSS	0.05	0.48	0.28	176
FRAC DIFFUSE OF TOTAL POSS	0.0	0.26	0.10	176
RELATIVE AIR MASS	0.0	14.57	2.93	427
EXT. COEF. (BASE E)	0.21	4.20	1.07	176

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

NO. HOURS

CLOUD FREE	0.50	60
CLOUD COVER (>1/10)	0.37	113
CIRRUS	0.19	3

## AVERAGE AIR MASS

NO. HOURS

CLOUD FREE	3.09	180
CLOUD COVER (>1/10)	2.85	234
CIRRUS	2.32	13

## AVERAGE EXT. COEF.

NO. HOURS

CLOUD FREE	1.35	60
CLOUD COVER (>1/10)	0.93	113
CIRRUS	0.95	3

LINEAR REGRESSION: I= 1.729 \* TH + -0.123

RELATIVE ERROR OF REGRESSION= -0.457

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBAY

AREA: POPLAR RIVER

SITE: BORDER STA

DATE: SEP 1978

WAVELENGTH: 0.3 - 0.7 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.57	0.25	364
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.66	0.33	366
DIFFUSE SKY IRRADIANCE	0.0	0.35	0.09	364
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.43	364
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.35	0.24	253
FRAC TRANS TOTAL SOLAR POSS	0.05	1.12	0.36	253
FRAC DIFFUSE OF TOTAL POSS	0.0	0.86	0.13	253
RELATIVE AIR MASS	0.0	14.51	3.41	367
EXT. COEF. (BASE E)	0.10	3.01	0.71	253

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

NO. HOURS

CLOUD FREE	0.32	109
CLOUD COVER (>1/10)	0.28	139
CIRRUS	0.73	5

## AVERAGE AIR MASS

NO. HOURS

CLOUD FREE	3.50	154
CLOUD COVER (>1/10)	3.21	166
CIRRUS	6.00	7

## AVERAGE EXT. COEF.

NO. HOURS

CLOUD FREE	0.68	109
CLOUD COVER (>1/10)	0.73	139
CIRRUS	0.59	5

LINEAR REGRESSION: I= 0.352 \* TH + 0.243

RELATIVE ERROR OF REGRESSION= -2.455



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBEE AREA: POPLAR RIVER SITE: BORDER STA DATE: NOV 1978

WAVELENGTH: 0.3 - 0.7 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO.HOURS
INCIDENT SOLAR RADIATION	0.0	0.35	0.13	263
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.67	0.17	267
DIFFUSE SKY IRRADIANCE	0.0	0.24	0.08	263
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.70	263
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.35	0.15	160
FRAC TRANS TOTAL SOLAR POSS	0.05	1.40	0.36	160
FRAC DIFFUSE OF TOTAL POSS	0.0	1.15	0.22	160
RELATIVE AIR MASS	0.0	14.58	4.64	253
EXT. CCEF. (BASE E)	0.09	2.26	0.68	160

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.64	118
CLOUD COVER (>1/10)	0.45	38
CIRRUS	0.68	4

	AVERAGE AIR MASS	NO.HOURS
CLOUD FREE	4.61	202
CLOUD COVER (>1/10)	4.87	46
CIRRUS	3.85	5

	AVERAGE EXT. CCEF. NO.HOURS
CLOUD FREE	0.74 118
CLOUD COVER (>1/10)	0.46 38
CIRRUS	0.93 4

LINEAR REGRESSION:  $I = 0.522 * TH + 0.094$   
 RELATIVE ERROR OF REGRESSION= 10.202

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBEE AREA: POPLAR RIVER SITE: BORDER STA DATE: OCT 1978

WAVELENGTH: 0.3 - 0.7 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO.HOURS
INCIDENT SOLAR RADIATION	0.0	0.52	0.20	327
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.64	0.25	327
DIFFUSE SKY IRRADIANCE	0.0	0.48	0.09	327
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.55	327
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.33	0.15	244
FRAC TRANS TOTAL SOLAR POSS	0.05	1.43	0.37	244
FRAC DIFFUSE OF TOTAL POSS	0.0	1.37	0.18	244
RELATIVE AIR MASS	0.0	14.51	3.82	317
EXT. CCEF. (BASE E)	0.11	2.90	0.73	244

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.45	147
CLOUD COVER (>1/10)	0.45	89
CIRRUS	0.50	8

	AVERAGE AIR MASS	NO.HOURS
CLOUD FREE	3.60	195
CLOUD COVER (>1/10)	4.03	112
CIRRUS	5.77	10

	AVERAGE EXT. CCEF. NO.HOURS
CLOUD FREE	0.77 147
CLOUD COVER (>1/10)	0.65 89
CIRRUS	0.70 8

LINEAR REGRESSION:  $I = 0.398 * TH + 0.228$   
 RELATIVE ERROR OF REGRESSION= -5.368

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBAY AREA: POPLAR RIVER SITE: ECRDER STA DATE: DEC 1978  
WAVELENGTH: 0.3 - 0.7 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.31	0.12	246
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.71	0.18	246
DIFFUSE SKY IRRADIANCE	0.0	0.21	0.08	246
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.77	246
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.38	0.15	155
FRAC TRANS TOTAL SOLAR POSS	0.06	1.02	0.41	155
FRAC DIFFUSE OF TOTAL POSS	0.00	0.73	0.25	155
RELATIVE AIR MASS	0.0	13.97	5.63	237
EXT. COEF. (BASE E)	0.10	1.61	0.61	155

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

CLOUD FREE	0.66	72
CLOUD COVER (>1/10)	0.63	80
CIRRUS	0.58	3

AVERAGE AIR MASS

CLOUD FREE	5.57	136
CLOUD COVER (>1/10)	5.77	98
CIRRUS	3.70	3

AVERAGE EXT. COEF. NC-HOURS

CLOUD FREE	0.62	72
CLOUD COVER (>1/10)	0.55	80
CIRRUS	0.58	3

LINEAR REGRESSION:  $I = 0.704 * TH + 0.001$   
RELATIVE ERROR OF REGRESSION = -0.045

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBAY AREA: POPLAR RIVER SITE: ECRDER STA DATE: JAN 1979  
WAVELENGTH: 0.3 - 0.7 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.36	0.14	276
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.64	0.18	156
DIFFUSE SKY IRRADIANCE	0.0	0.20	0.08	196
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.76	196
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.34	0.15	121
FRAC TRANS TOTAL SOLAR POSS	0.12	1.14	0.41	121
FRAC DIFFUSE OF TOTAL POSS	0.0	1.04	0.26	121
RELATIVE AIR MASS	0.0	14.58	5.22	253
EXT. COEF. (BASE E)	0.10	1.84	0.55	121

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

CLOUD FREE	0.60	71
CLOUD COVER (>1/10)	0.69	45
CIRRUS	0.93	1

AVERAGE AIR MASS

CLOUD FREE	5.08	127
CLOUD COVER (>1/10)	5.36	118
CIRRUS	5.05	8

AVERAGE EXT. COEF. NC-HOURS

CLOUD FREE	0.54	71
CLOUD COVER (>1/10)	0.65	45
CIRRUS	0.77	1

LINEAR REGRESSION:  $I = 0.429 * TH + 0.111$   
RELATIVE ERROR OF REGRESSION = -6.656

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SPOEY AREA: PULPARK RIVER SITE: EORDEF STA DATE: MAR 1975  
WAVELENGTH: 0.3 - 0.7 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.55	0.23	363
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.65	0.21	363
DIFFUSE SKY IRRADIANCE	0.0	0.52	0.14	363
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.72	363
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.24	0.16	240
FRAC TRANS TOTAL SOLAR BEAM	0.06	1.02	0.27	240
FRAC DIFFUSE OF TOTAL POSS	0.0	0.55	0.21	240
RELATIVE AIR MASS	0.0	14.57	3.46	353
EXT. COEF. (BASE E)	0.13	3.71	1.05	240

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC- HOURS
CLOUD FREE	0.61	107
CLOUD COVER (>1/10)	0.57	124
CIRRUS	0.75	5

	AVERAGE AIR MASS	NC-HOURS
CLOUD FREE	3.62	165
CLOUD COVER (>1/10)	3.35	172
CIRRUS	2.83	12

	AVERAGE EXT. COEF.	NC-HOURS
CLOUD FREE	1.10	107
CLOUD COVER (>1/10)	0.95	124
CIRRUS	1.81	5

LINEAR REGRESSION:  $I = 0.885 * Th + 0.015$   
RELATIVE ERROR OF REGRESSION = -0.157

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SPOEY AREA: PULPARK RIVER SITE: EORDEF STA DATE: FEB 1975  
WAVELENGTH: 0.3 - 0.7 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.45	0.19	277
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.66	0.19	276
DIFFUSE SKY IRRADIANCE	0.0	0.33	0.12	277
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.75	277
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.26	0.17	165
FRAC TRANS TOTAL SOLAR BEAM	0.09	1.77	0.41	165
FRAC DIFFUSE OF TOTAL POSS	0.0	1.62	0.24	165
RELATIVE AIR MASS	0.0	14.56	4.12	267
EXT. COEF. (BASE E)	0.14	2.44	0.77	165

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC- HOURS
CLOUD FREE	0.65	91
CLOUD COVER (>1/10)	0.55	67
CIRRUS	0.38	7

	AVERAGE AIR MASS	NC-HOURS
CLOUD FREE	4.00	173
CLOUD COVER (>1/10)	4.52	85
CIRRUS	2.77	5

	AVERAGE EXT. COEF.	NC-HOURS
CLOUD FREE	0.84	91
CLOUD COVER (>1/10)	0.70	67
CIRRUS	0.54	7

LINEAR REGRESSION:  $I = 0.350 * Th + 0.175$   
RELATIVE ERROR OF REGRESSION = -1.054



MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBEE AREA: POPLAR RIVER SITE: BORDER STA DATE: AUG 1978  
WAVELENGTH: 0.7 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.63	0.26	202
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.79	0.30	202
DIFFUSE SKY IRRADIANCE	0.0	0.54	0.09	202
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.47	202
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.40	0.18	170
FRAC TRANS TOTAL SOLAR POSS	0.04	0.58	0.27	170
FRAC DIFFUSE OF TOTAL POSS	0.0	0.41	0.09	170
RELATIVE AIR MASS	0.0	14.57	2.93	427
EXT. COEF. (BASE E)	0.24	4.20	1.08	170

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.48	59
CLOUD COVER (>1/10)	0.32	108
CIRRUS	0.15	3

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	3.09	180
CLOUD COVER (>1/10)	2.85	234
CIRRUS	2.32	13

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	1.35	59
CLOUD COVER (>1/10)	0.94	108
CIRRUS	0.98	3

LINEAR REGRESSION:  $I = 1.372 * TH + -0.016$   
RELATIVE ERROR OF REGRESSION = -0.114

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES  
CITY: SCOBEE AREA: POPLAR RIVER SITE: BORDER STA DATE: SEP 1978  
WAVELENGTH: 0.7 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NO. HOURS
INCIDENT SOLAR RADIATION	0.0	0.68	0.22	363
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.08	0.33	364
DIFFUSE SKY IRRADIANCE	0.0	0.48	0.07	363
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.41	363
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.55	0.26	230
FRAC TRANS TOTAL SOLAR POSS	0.04	0.85	0.33	230
FRAC DIFFUSE OF TOTAL POSS	0.0	0.76	0.08	230
RELATIVE AIR MASS	0.0	14.51	3.41	367
EXT. COEF. (BASE E)	0.13	3.45	0.67	230

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NO. HOURS
CLOUD FREE	0.25	100
CLOUD COVER (>1/10)	0.20	126
CIRRUS	0.25	4

	AVERAGE AIR MASS	NO. HOURS
CLOUD FREE	3.50	194
CLOUD COVER (>1/10)	3.21	166
CIRRUS	6.00	7

	AVERAGE EXT. COEF.	NO. HOURS
CLOUD FREE	0.69	100
CLOUD COVER (>1/10)	0.67	126
CIRRUS	0.28	4

LINEAR REGRESSION:  $I = 0.512 * TH + 0.237$   
RELATIVE ERROR OF REGRESSION = -4.054

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBEY AREA: PCPLAR RIVER SITE: ECRDER STA DATE: NOV 1978  
WAVELENGTH: 0.7 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC.HOURS
INCIDENT SOLAR RADIATION	0.0	0.39	0.12	263
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.66	0.15	267
DIFFUSE SKY IRRADIANCE	0.0	0.35	0.08	263
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.70	263
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.35	0.15	139
FRAC TRANS TOTAL SOLAR POSS	0.02	1.20	0.34	139
FRAC DIFFUSE OF TOTAL POSS	0.0	0.99	0.20	139
RELATIVE AIR MASS	0.0	14.58	4.64	253
EXT. COEF. (BASE E)	0.10	2.25	0.71	139

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

CLOUD FREE	0.60	102
CLOUD COVER (>1/10)	0.42	34
CIRRUS	0.88	3

AVERAGE AIR MASS

CLOUD FREE	4.61	202
CLOUD COVER (>1/10)	4.87	46
CIRRUS	3.85	5

AVERAGE EXT. COEF. NC.HOURS

CLOUD FREE	0.74	102
CLOUD COVER (>1/10)	0.54	34
CIRRUS	1.59	3

LINEAR REGRESSION: I= 0.397 \* TH + 0.143

RELATIVE ERROR OF REGRESSION= -517.952

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOBEY AREA: PCPLAR RIVER SITE: ECRDER STA DATE: OCT 1978  
WAVELENGTH: 0.7 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC.HOURS
INCIDENT SOLAR RADIATION	0.0	0.66	0.17	227
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	1.13	0.27	227
DIFFUSE SKY IRRADIANCE	0.0	0.60	0.07	227
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.48	227
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.58	0.20	225
FRAC TRANS TOTAL SOLAR POSS	0.03	1.16	0.31	225
FRAC DIFFUSE OF TOTAL POSS	0.0	1.08	0.12	225
RELATIVE AIR MASS	0.0	14.51	3.82	217
EXT. COEF. (BASE E)	0.12	2.81	0.68	225

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

CLOUD FREE	0.26	126
CLOUD COVER (>1/10)	0.31	81
CIRRUS	0.34	8

AVERAGE AIR MASS

CLOUD FREE	3.60	195
CLOUD COVER (>1/10)	4.03	112
CIRRUS	5.77	10

AVERAGE EXT. COEF. NC.HOURS

CLOUD FREE	0.76	136
CLOUD COVER (>1/10)	0.55	81
CIRRUS	0.68	8

LINEAR REGRESSION: I= 0.355 \* TH + 0.282

RELATIVE ERROR OF REGRESSION= -3.565

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: CODY AREA: PUPPLAR RIVER SITE: BERDEF STA DATE: DEC 1978  
WAVELENGTH: 0.7 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.34	0.10	246
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.62	0.15	246
DIFFUSE SKY IRRADIANCE	0.0	0.22	0.07	246
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.69	246
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.33	0.15	136
FRAC TRANS TOTAL SOLAR POSS	0.06	0.14	0.24	136
FRAC DIFFUSE OF TOTAL POSS	0.0	0.54	0.20	136
RELATIVE AIR MASS	0.0	13.97	5.63	237
EXT. COEF. (BASE E)	0.12	1.61	0.57	136

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

CLOUD FREE	0.62	58
CLOUD COVER (>1/10)	0.53	75
CIRRUS	0.60	3

AVERAGE AIR MASS

CLOUD FREE	5.57	136
CLOUD COVER (>1/10)	5.77	58
CIRRUS	3.70	3

AVERAGE EXT. COEF. NC-HOURS

CLOUD FREE	0.60	58
CLOUD COVER (>1/10)	0.55	75
CIRRUS	0.58	3

LINEAR REGRESSION:  $I = 0.661 * TH + 0.049$   
RELATIVE ERROR OF REGRESSION = 0.922

MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SCOTNEY AREA: PUPPLAR RIVER SITE: FORTLEF STA DATE: JAN 1979  
WAVELENGTH: 0.7 - 2.8 MICRON

SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.27	0.13	276
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.58	0.20	196
DIFFUSE SKY IRRADIANCE	0.0	0.23	0.08	196
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.62	196
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.52	0.15	110
FRAC TRANS TOTAL SOLAR POSS	0.08	1.63	0.45	110
FRAC DIFFUSE OF TOTAL POSS	0.0	1.50	0.27	110
RELATIVE AIR MASS	0.0	14.58	5.22	253
EXT. COEF. (BASE E)	0.07	1.74	0.55	110

AVERAGE RATIO OF  
DIFFUSE TO TOTAL

CLOUD FREE	0.52	67
CLOUD COVER (>1/10)	0.67	42
CIRRUS	0.92	1

AVERAGE AIR MASS

CLOUD FREE	5.08	127
CLOUD COVER (>1/10)	5.38	118
CIRRUS	5.05	8

AVERAGE EXT. COEF. NC-HOURS

CLOUD FREE	0.50	67
CLOUD COVER (>1/10)	0.61	42
CIRRUS	0.77	1

LINEAR REGRESSION:  $I = 0.302 * TH + 0.213$   
RELATIVE ERROR OF REGRESSION = -11.710



## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SPOEY AREA: POPLAR RIVER SITE: ECLER STA DATE: MAR 1979

WAVELENGTH: 0.7 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.71	0.21	362
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.74	0.21	288
DIFFUSE SKY IRRADIANCE	0.0	0.42	0.10	288
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.44	288
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.35	0.21	148
FRAC TRANS TOTAL SOLAR BEAM	0.02	1.47	0.35	148
FRAC DIFFUSE OF TOTAL POSS	0.0	1.26	0.14	148
RELATIVE AIR MASS	0.0	14.57	3.46	353
EXT. COEF. (BASE E)	0.15	3.71	0.78	148

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC- HOURS
CLOUD FREE	0.52	66
CLOUD COVER (>1/10)	0.32	77
CIRRUS	0.38	5

	AVERAGE AIR MASS	NC-HOURS
CLOUD FREE	3.62	165
CLOUD COVER (>1/10)	3.35	172
CIRRUS	2.83	12

	AVERAGE EXT. COEF.	NC-HOURS
CLOUD FREE	0.95	66
CLOUD COVER (>1/10)	0.64	77
CIRRUS	0.58	5

LINEAR REGRESSION:  $I = 0.546 * TM + 0.218$ 

RELATIVE ERROR OF REGRESSION= 4.064

## MONTANA STATE DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES

CITY: SPOEY AREA: POPLAR RIVER SITE: ECLER STA DATE: FEB 1979

WAVELENGTH: 0.7 - 2.8 MICRON

## SUMMARY OF HOURLY MEASUREMENTS OF SOLAR RADIATION

	MIN	MAX	AVE	NC-HOURS
INCIDENT SOLAR RADIATION	0.0	0.50	0.17	277
NORMAL INCIDENT DIRECT SOLAR BEAM	0.0	0.75	0.16	264
DIFFUSE SKY IRRADIANCE	0.0	0.35	0.12	262
RATIO OF DIFFUSE TO TOTAL	0.0	1.00	0.71	262
FRAC TRANS DIRECT SOLAR BEAM	0.01	0.35	0.16	132
FRAC TRANS TOTAL SOLAR BEAM	0.03	1.42	0.36	132
FRAC DIFFUSE OF TOTAL POSS	0.0	1.41	0.21	132
RELATIVE AIR MASS	0.0	14.56	4.12	267
EXT. COEF. (BASE E)	0.14	2.61	0.77	132

	AVERAGE RATIO OF DIFFUSE TO TOTAL	NC- HOURS
CLOUD FREE	0.60	77
CLOUD COVER (>1/10)	0.47	45
CIRRUS	0.26	6

	AVERAGE AIR MASS	NC-HOURS
CLOUD FREE	4.00	172
CLOUD COVER (>1/10)	4.52	85
CIRRUS	2.77	5

	AVERAGE EXT. COEF.	NC-HOURS
CLOUD FREE	0.85	77
CLOUD COVER (>1/10)	0.66	45
CIRRUS	0.61	6

LINEAR REGRESSION:  $I = 0.137 * TM + 0.261$ 

RELATIVE ERROR OF REGRESSION= -2.502

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 51.4000  
 SITE ELEV(M)=743.0 YEAR= 1977 MONTH= 4 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
7	18	34.6	0.21	33.6	0.17	1.514	1.35
7	1503	37.2	0.19	33.6	0.13	1.152	1.30
8	1203	28.0	0.23	33.6	0.13	1.135	1.34
8	1203	29.2	0.18	33.6	0.13	1.163	1.30
11	1903	31.3	0.16	33.6	0.17	1.080	1.175
11	1201	31.3	0.22	33.6	0.19	0.800	1.132
11	1452	37.1	0.23	33.6	0.16	0.800	1.132
11	1946	33.4	0.22	33.6	0.13	1.122	1.35
12	1200	32.8	0.16	33.6	0.13	1.132	1.35
12	1508	30.5	0.21	33.6	0.17	1.054	1.29
13	1150	32.6	0.20	33.6	0.17	1.054	1.29
13	1508	31.2	0.23	33.6	0.15	1.060	1.29
15	1200	37.0	0.23	33.6	0.17	1.054	1.29
15	1908	32.0	0.23	33.6	0.18	1.054	1.29
16	1150	37.0	0.23	33.6	0.18	1.054	1.29
16	1908	32.0	0.23	33.6	0.18	1.054	1.29
26	1154	37.6	0.22	33.6	0.20	1.073	1.37
26	1454	31.9	0.23	33.6	0.20	1.073	1.37
28	1911	31.9	0.23	33.6	0.20	1.073	1.37
28	1454	29.1	0.23	33.6	0.26	1.057	1.48
29	1459	29.1	0.23	33.6	0.26	1.057	1.48
AVERAGE		32.2	0.23	31.5	0.17	1.001	1.54
0900 AVER			0.23		0.17		1.64
1200 AVER			0.23		0.17		1.29
1500 AVER			0.22		0.17		1.69

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 51.4000  
 SITE ELEV(M)=743.0 YEAR= 1977 MONTH= 5 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
6	1434	33.6	0.29	33.6	0.15	1.841	1.47
10	1511	33.6	0.38	33.6	0.27	1.889	1.17
11	1438	33.6	0.33	33.6	0.24	1.247	1.15
11	1915	33.6	0.33	33.6	0.15	1.247	1.15
11	1226	33.6	0.33	33.6	0.20	1.581	1.14
11	1454	33.6	0.33	33.6	0.27	1.247	1.15
12	1204	33.6	0.33	33.6	0.20	1.247	1.15
12	1508	33.6	0.33	33.6	0.15	1.247	1.15
12	1908	33.6	0.33	33.6	0.15	1.247	1.15
13	1204	33.6	0.33	33.6	0.15	1.247	1.15
13	1508	33.6	0.33	33.6	0.15	1.247	1.15
13	1908	33.6	0.33	33.6	0.15	1.247	1.15
13	1458	33.6	0.33	33.6	0.18	1.324	1.40
13	1908	33.6	0.33	33.6	0.18	1.324	1.40
13	1458	33.6	0.33	33.6	0.18	1.324	1.40
13	1908	33.6	0.33	33.6	0.18	1.324	1.40
AVERAGE		33.6	0.29	32.5	0.19	1.495	1.31
0900 AVER			0.25		0.16		1.33
1200 AVER			0.35		0.22		1.15
1500 AVER			0.26		0.18		1.43

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METH-OC PAGE 1)

CALIBRATION JLC(350)=	35.3000	CALIBRATION JLC(500)=	51.4000
SITE ELEV(M)=743.6	YEAR= 1977	MONTH= 7	LATITUDE= 49.0

[illegible]

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)  
CALIPRATION JUL80J= 85.3000 CALIPRATION JC15CC= 51.4000  
SITE ELEVIM=143.0 YEAR= 1977 MONTH= 6 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (330)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPERIMENT	AIR MASS	RELATIVE
1	15	25.3	0.2	1.37	0.12	1.0	1.45	1.0
1	15	35.6	0.2	3.4	0.0	1.0	1.15	1.0
1	15	35.3	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.15	1.0
1	15	34.0	0.2	3.3	0.0	1.0	1.37	1.0





PCPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOC BASE E)											
CALIBRATION JU(380U)= 85.300C		CALIBRATION JU(500U)= 51.400D		SITE ELEV(M)=743.0		YEAR= 1977		MONTH=11		LATITUDE= 49.0	
METER VALUE (380)		TURBIDITY (380)		METER VALUE (500)		TURBIDITY (500)		WAVELENGTH EXPONENT		RELATIVE AIR MASS	
DAY	HOUR										
859	17:58	3	0.05	29.5	0.03	1	1.94	3	0.52		
859	17:59	17:58	0.07	27.4	0.04	1	1.94	3	0.52		
11453	10:10	10:10	0.10	22.7	0.04	1	1.94	3	0.52		
1459	16:18	16:18	0.04	33.0	0.04	1	1.94	3	0.52		
1459	16:18	16:18	0.04	33.0	0.04	1	1.94	3	0.52		
1559	8:04	8:04	0.05	22.5	0.03	1	1.94	3	0.52		
1559	8:04	8:04	0.05	22.5	0.03	1	1.94	3	0.52		
1900	12:53	12:53	0.08	22.5	0.04	1	1.94	3	0.52		
1900	12:53	12:53	0.07	22.5	0.04	1	1.94	3	0.52		
1957	17:39	17:39	0.06	23.3	0.04	1	1.94	3	0.52		
1957	17:39	17:39	0.07	23.3	0.04	1	1.94	3	0.52		
1405	17:33	17:33	0.05	21.4	0.03	1	1.94	3	0.52		
1459	4:14	4:14	0.11	19.0	0.03	1	1.94	3	0.52		
1457	21:18	21:18	0.07	19.0	0.04	1	1.94	3	0.52		
1502	21:53	21:53	0.02	30.8	0.04	1	1.94	3	0.52		
1159	21:53	21:53	0.06	16.0	0.04	1	1.94	3	0.52		
1454	21:53	21:53	0.01	18.4	0.01	1	1.94	3	0.52		
AVERAGE	14.4	0.06	25.2	0.04	1.682	4.17					
0900 AVER		0.06		0.03	4.30						
1200 AVER		0.09		0.06	2.66						
1500 AVER		0.05		0.03	5.75						

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)  
 CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 51.4000  
 SITE ELEV(M)=743.0 YEAR= 1977 MONTH=12 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
5	1500	1.5	0.13	8.9	0.09	1.201	7.56
12	1304	17.0	0.35	28.4	0.03	1.879	3.54
12	1457	13.4	0.32	16.4	0.01	2.271	3.52
13	1204	18.7	0.37	29.5	0.04	2.190	3.58
13	1903	10.7	0.05	23.9	0.03	1.824	7.33
20	1902	11.4	0.14	27.0	0.12	1.630	3.39
20	1139	17.4	0.14	24.5	0.09	1.675	4.59
27	1955	18.4	0.10	21.3	0.05	2.236	5.20
AVERAGE	9.4		0.09	20.0	0.06	1.726	5.91
0900 AVER			0.13		0.09		3.36
1200 AVER			0.09		0.05		6.56
1500 AVER			0.06		0.04		

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)  
 CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 51.4000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH=1 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
2	902	2.8	0.35	13.8	0.03	1.088	7.54
2	1156	19.1	0.07	28.9	0.03	1.139	3.19
2	1450	6.6	0.32	20.1	0.02	1.816	3.57
10	1904	4.3	0.03	17.9	0.02	1.090	9.89
10	1200	20.2	0.07	29.8	0.05	1.566	3.04
11	1500	5.8	0.05	18.8	0.03	1.737	5.87
11	1908	4.4	0.05	17.9	0.03	1.781	3.01
11	1202	20.2	0.08	28.9	0.06	1.091	5.68
11	1456	6.4	0.05	19.4	0.03	1.565	3.90
18	1859	3.3	0.06	14.6	0.04	1.647	2.84
18	1150	20.3	0.10	29.1	0.07	1.179	5.08
18	1904	5.5	0.05	22.2	0.03	2.175	3.11
19	1203	8.9	0.04	18.7	0.03	1.102	4.95
19	1459	21.0	0.08	29.6	0.05	1.646	6.14
19	1903	3.7	0.07	13.4	0.08	1.090	2.91
20	1158	17.0	0.15	26.0	0.11	1.076	4.42
20	1455	11.5	0.10	18.2	0.04	1.502	2.55
23	1159	23.1	0.09	31.2	0.06	1.609	2.52
27	1901	26.1	0.07	18.2	0.05	1.643	2.55
27	1204	23.4	0.13	30.6	0.07	1.431	4.17
30	1912	6.4	0.15	16.6	0.10	1.259	4.70
AVERAGE	11.2		0.07	22.0	0.05	1.408	4.79
0900 AVER			0.07		0.05		6.29
1200 AVER			0.09		0.06		2.86
1500 AVER			0.06		0.04		5.27



POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 51.4000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH= 3 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXONENT	RELATIVE AIR MASS
3	858	18.7	0.15	27.1	0.08	1.266	2.92
3	859	31.9	0.12	32.0	0.09	1.628	1.76
3	1438	23.3	0.10	31.0	0.07	1.028	2.46
8	1437	26.6	0.11	29.0	0.08	1.404	2.33
10	1858	22.1	0.13	34.0	0.10	1.914	1.66
10	1458	26.5	0.16	31.4	0.08	1.206	2.34
16	1902	23.5	0.18	29.0	0.13	1.138	1.58
16	1248	25.8	0.15	33.0	0.11	1.295	2.14
20	1446	28.9	0.17	32.0	0.09	1.281	2.02
22	1856	26.8	0.18	31.5	0.13	1.109	1.50
22	1233	35.9	0.17	33.0	0.13	1.165	1.86
29	1453	29.9	0.16	31.0	0.12	1.102	1.84
31	AVERAGE	27.8	0.14	31.3	0.10	1.203	2.10
	0900 AVER		0.12		0.08		2.52
	1200 AVER		0.16		0.12		1.63
	1500 AVER		0.13		0.10		2.13

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 51.4000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH= 2 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXONENT	RELATIVE AIR MASS
1	857	6.6	0.08	18.3	0.06	1.303	5.23
1	1201	24.8	0.10	31.2	0.07	1.402	2.45
1	1454	17.0	0.07	25.8	0.05	1.625	3.77
16	1504	13.3	0.11	26.6	0.07	1.025	3.13
17	1858	29.1	0.12	24.9	0.06	1.566	3.77
17	1458	19.4	0.11	27.5	0.08	1.410	2.05
20	1858	30.9	0.12	33.0	0.08	1.295	2.89
22	1457	21.5	0.09	33.0	0.08	1.383	1.73
24	1200	31.0	0.13	33.7	0.09	1.200	2.01
24	1400	27.0	0.13	31.6	0.09	1.318	2.17
	AVERAGE	21.4	0.10	28.7	0.07	1.385	2.91
	0900 AVER		0.09		0.06		4.50
	1200 AVER		0.12		0.08		2.09
	1500 AVER		0.10		0.07		2.94

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

CALIBRATION JO(380)= 85.3000 CALIBRATION JO(500)= 51.4000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH= 4 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
4	901	27.9	0.18	30.2	0.14	1.011	1.89
4	1156	36.7	0.21	34.1	0.15	1.146	1.37
6	1222	31.0	0.15	33.5	0.12	0.950	1.36
10	900	39.0	0.13	32.5	0.13	1.166	1.32
10	1158	32.8	0.14	35.3	0.10	1.023	1.37
19	1455	32.2	0.18	32.8	0.13	1.249	1.64
20	902	38.0	0.18	32.7	0.12	1.221	1.64
20	1158	30.6	0.22	31.2	0.15	1.369	1.53
24	1443	30.2	0.26	30.9	0.18	1.330	1.53
	AVERAGE	33.4	0.19	32.9	0.14	1.141	1.56
	0900 AVER		0.17		0.12		1.77
	1200 AVER		0.20		0.15		1.33
	1500 AVER		0.20		0.14		1.63

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

CALIBRATION JO(380)= 85.3000 CALIBRATION JO(500)= 55.3000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH= 5 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
2	906	22.5	0.47	29.4	0.26	1.05	1.51
2	1159	30.9	0.43	34.7	0.23	2.194	1.20
9	906	29.1	0.38	36.1	0.13	2.821	1.49
15	1201	38.2	0.36	39.8	0.07	2.721	1.43
15	1455	33.9	0.22	40.9	0.10	2.698	1.16
19	1201	31.0	0.40	38.5	0.09	2.502	1.45
22	1857	34.8	0.20	37.0	0.12	2.337	1.44
23	1205	33.6	0.23	38.6	0.15	2.371	1.14
23	1858	37.8	0.22	38.6	0.09	2.511	1.42
25	1201	33.0	0.47	40.9	0.17	2.011	1.42
25	1857	32.3	0.40	38.4	0.19	2.637	1.33
26	1205	35.5	0.25	38.4	0.14	2.637	1.43
26	1457	29.2	0.33	35.6	0.15	2.864	1.41
	AVERAGE	31.6	0.33	36.7	0.15	3.007	1.33
	0900 AVER		0.31		0.15		1.45
	1200 AVER		0.35		0.15		1.15
	1500 AVER		0.32		0.15		1.43

[illegible]

PCPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)									
CALIBRATION JO(380)= 85.3000		CALIBRATION JC(500)= 55.3000							
SITE ELEV(M)=743.0		YEAR= 1978		MONTH= 6		LATITUDE= 49.0			
METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS				
DAY	HOUR								
5	55	8	0.4	33	0	21	2	761	3
5	58	25	0.4	37	0	19	2	114	3
5	59	32	0.2	39	0	14	2	142	3
5	60	39	0.2	47	0	15	2	199	3
12	05	35	0.2	36	0	10	3	111	3
12	06	38	0.2	47	0	10	3	111	3
12	07	33	0.2	41	0	11	3	111	3
12	08	33	0.2	48	0	11	3	111	3
12	09	33	0.3	45	0	17	3	111	3
12	10	33	0.3	39	0	09	3	111	3
12	11	32	0.2	35	0	10	3	111	3
12	12	32	0.2	39	0	10	3	111	3
12	13	32	0.2	36	0	14	3	111	3
12	14	35	0.2	38	0	14	3	111	3
12	15	30	0.2	34	0	11	3	111	3
12	16	30	0.2	38	0	12	3	111	3
12	17	36	0.3	40	0	10	3	111	3
12	18	37	0.3	37	0	10	3	111	3
12	19	36	0.2	38	0	10	3	111	3
12	20	33	0.2	36	0	10	3	111	3
12	21	33	0.2	36	0	10	3	111	3
12	22	33	0.2	36	0	10	3	111	3
12	23	33	0.2	36	0	10	3	111	3
12	24	33	0.2	36	0	10	3	111	3
12	25	33	0.2	36	0	10	3	111	3
12	26	33	0.2	36	0	10	3	111	3
12	27	33	0.2	36	0	10	3	111	3
12	28	33	0.2	36	0	10	3	111	3
12	29	33	0.2	36	0	10	3	111	3
12	30	33	0.2	36	0	10	3	111	3
12	31	33	0.2	36	0	10	3	111	3
AVERAGE		33.1	0.31	38.3	0.12	3.523	1.27	1.35	1.11
0900 AVER			0.30		0.12				1.37
1200 AVER			0.34		0.13				
1500 AVER			0.30		0.11				



POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

CALIBRATION JO(380)= 85.3000 CALIBRATION JO(500)= 55.3000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH= 8 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
2	858	32.6	0.02	7.0	0.05	4.848	1.547
2	1212	39.5	0.06	39.8	0.06	5.358	1.177
2	1503	33.1	0.06	39.6	0.06	4.389	1.152
3	1209	38.3	0.06	42.0	0.06	4.257	1.146
3	1459	34.3	0.05	40.8	0.07	4.504	1.154
4	1157	34.2	0.06	41.0	0.06	4.452	1.146
4	1458	33.1	0.09	39.6	0.09	3.374	1.156
7	1245	33.1	0.07	38.1	0.08	3.634	1.155
7	1456	33.6	0.08	37.1	0.08	3.743	1.152
8	1157	33.0	0.08	37.3	0.08	3.485	1.157
8	1457	33.4	0.07	37.6	0.07	3.678	1.158
9	1455	33.0	0.08	36.3	0.10	3.550	1.159
9	1854	33.4	0.08	36.4	0.10	3.637	1.159
10	1153	32.9	0.06	36.9	0.06	3.634	1.159
11	1453	32.0	0.06	38.0	0.06	3.634	1.159
11	1901	32.0	0.06	38.0	0.06	3.634	1.159
17	1200	31.2	0.06	38.0	0.06	3.634	1.159
17	1501	31.2	0.06	38.0	0.06	3.634	1.159
18	1201	31.2	0.06	38.0	0.06	3.634	1.159
22	1456	31.7	0.06	38.0	0.06	3.634	1.159
22	1903	31.7	0.06	38.0	0.06	3.634	1.159
23	1201	31.7	0.06	38.0	0.06	3.634	1.159
23	1458	31.7	0.06	38.0	0.06	3.634	1.159
24	1201	31.7	0.06	38.0	0.06	3.634	1.159
24	1458	31.7	0.06	38.0	0.06	3.634	1.159
25	1201	31.7	0.06	38.0	0.06	3.634	1.159
25	1458	31.7	0.06	38.0	0.06	3.634	1.159
28	1201	31.7	0.06	38.0	0.06	3.634	1.159
28	1458	31.7	0.06	38.0	0.06	3.634	1.159
29	1201	31.7	0.06	38.0	0.06	3.634	1.159
29	1458	31.7	0.06	38.0	0.06	3.634	1.159
30	1201	31.7	0.06	38.0	0.06	3.634	1.159
30	1458	31.7	0.06	38.0	0.06	3.634	1.159
AVERAGE		32.6	0.23	38.9	0.08	4.061	1.47
0900 AVEP			0.21		0.07		1.62
1200 AVEP			0.26		0.08		1.22
1500 AVEP			0.23		0.08		1.52

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE F)

CALIBRATION JO(380)= 85.3000 CALIBRATION JO(500)= 55.3000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH= 9 LATITUDE= 49.0

DAY	HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
1	858	28.6	0.19	37.1	0.07	3.714	1.79
1	1159	24.9	0.25	40.0	0.09	3.888	1.32
4	913	20.1	0.27	35.4	0.19	3.283	1.77
15	1300	20.3	0.21	37.2	0.11	3.207	1.177
20	1158	24.0	0.20	36.9	0.07	3.888	1.505
20	1457	25.3	0.17	35.0	0.07	3.888	1.505
25	1157	21.3	0.23	37.0	0.11	3.283	1.177
25	1900	24.7	0.19	33.5	0.08	2.339	1.555
27	1200	27.8	0.29	33.3	0.17	2.931	2.208
29	1158	26.8	0.31	33.3	0.12	2.931	1.61
29	1453	19.1	0.23	31.0	0.10	2.942	2.33
AVERAGE		27.0	0.23	35.3	0.10	3.090	1.81
0900 AVER			0.22		0.10		1.92
1200 AVER			0.26		0.11		1.51
1500 AVER			0.19		0.08		2.23

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)  
 CALIBRATION JU(380)= 85.3000 CALIBRATION JC(500)= 55.3000  
 SITE ELEV(M)=743.0 YEAR= 1979 MONTH= 1 LATITUDE= 49.0

DAY HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
17 903	4.2	0.06	14.5	0.07	-0.580	6.50
17 1207	17.5	0.12	30.3	0.07	2.284	2.89
19 1157	18.3	0.14	30.5	0.08	2.253	2.85
AVERAGE	13.3	0.11	25.1	0.07	1.385	4.08
0900 AVER		0.06		0.07		6.50
1200 AVER		0.14		0.07		2.87
1500 AVER		0.0		0.0		0.0

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)  
 CALIBRATION JU(380)= 85.3000 CALIBRATION JC(500)= 55.3000  
 SITE ELEV(M)=743.0 YEAR= 1978 MONTH= 10 LATITUDE= 49.0

DAY HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
11 858	21.9	0.11	34.2	0.04	3.647	2.59
11 1200	29.1	0.19	37.0	0.08	3.086	1.80
11 1306	27.9	0.20	36.7	0.08	3.279	1.84
13 1355	16.4	0.33	28.8	0.15	2.877	2.22
20 1259	18.0	0.13	30.6	0.06	2.631	2.89
20 1359	24.9	0.22	34.0	0.11	2.601	1.97
25 1400	11.1	0.15	25.1	0.16	3.033	2.56
30 1200	13.5	0.15	27.9	0.08	3.070	2.34
30 1200	24.5	0.16	35.5	0.06	3.437	2.20
AVERAGE	20.8	0.21	32.2	0.09	3.073	2.39
0900 AVER		0.13		0.06		2.54
1200 AVER		0.22		0.10		2.01
1500 AVER		0.36		0.16		2.66

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)  
 CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 55.3000  
 SITE ELEV(M)=743.0 YEAR= 1979 MONTH= 2 LATITUDE= 49.0

DAY HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
2 905	5.5	0.16	16.5	0.11	1.335	4.85
23 1200	21.2	0.31	29.9	0.18	1.985	1.95
AVERAGE	13.3	0.24	23.2	0.15	1.660	3.40
0900 AVER		0.16		0.11		4.85
1200 AVER		0.31		0.18		1.95
1500 AVER		0.0		0.0		0.0

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)  
 CALIBRATION JO(380)= 85.3000 CALIBRATION JC(500)= 55.3000  
 SITE ELEV(M)=743.0 YEAR= 1979 MONTH= 3 LATITUDE= 49.0

DAY HOUR	METER VALUE (380)	TURBIDITY (380)	METER VALUE (500)	TURBIDITY (500)	WAVELENGTH EXPONENT	RELATIVE AIR MASS
5 1500	22.2	0.14	33.4	0.07	2.742	2.47
14 904	19.2	0.21	29.6	0.12	2.083	2.42
14 1204	27.8	0.29	35.0	0.14	2.507	1.62
14 1458	21.5	0.22	31.7	0.11	2.411	2.21
19 902	19.8	0.27	30.3	0.14	2.426	2.16
28 1200	28.5	0.35	35.0	0.17	2.538	1.45
AVERAGE	23.2	0.24	32.5	0.12	2.452	2.06
0900 AVER		0.24		0.13		2.29
1200 AVER		0.32		0.16		1.53
1500 AVER		0.18		0.09		2.34



POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

SITE ELEV (M)= 723. YEAR = 1978 MONTH= 6 LATITUDE= 49.0

DAY	HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
5	906	0.35	0.21	0.15	0.08	0.38	1.37
5	1203	0.33	0.18	0.10	0.07	0.34	1.12
5	1459	0.25	0.14	0.08	0.07	0.36	1.13
8	1900	0.24	0.13	0.08	0.08	0.40	1.13
8	1156	0.28	0.15	0.11	0.12	0.45	1.11
12	1858	0.22	0.10	0.05	0.05	0.36	1.11
12	1203	0.22	0.10	0.04	0.05	0.33	1.11
16	1856	0.25	0.11	0.07	0.05	0.45	1.14
16	1205	0.20	0.17	0.11	0.09	0.39	1.11
20	1905	0.20	0.17	0.14	0.04	0.45	1.17
20	1204	0.24	0.10	0.05	0.05	0.33	1.13
21	1504	0.20	0.10	0.05	0.04	0.35	1.18
21	1458	0.22	0.10	0.05	0.04	0.32	1.16
22	1201	0.27	0.14	0.08	0.06	0.41	1.19
22	1901	0.21	0.11	0.06	0.06	0.34	1.13
23	1201	0.23	0.12	0.06	0.06	0.47	1.19
27	1901	0.26	0.11	0.06	0.05	0.32	1.13
27	906	0.21	0.10	0.05	0.05	0.46	1.38
28	1203	0.24	0.10	0.05	0.05	0.41	1.11
28	1458	0.20	0.09	0.05	0.05	0.41	1.11
30	1458	0.25	0.13	0.05	0.08	0.71	1.36
AVERAGE		0.24	0.12	0.07	0.06	0.41	1.27
0900 AVER		0.23	0.12	0.07	0.06	0.39	1.39
1200 AVER		0.26	0.13	0.07	0.07	0.42	1.11
1500 AVER		0.22	0.11	0.07	0.06	0.43	1.37

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

SITE ELEV (M)= 723. YEAR = 1978 MONTH= 5 LATITUDE= 49.0

DAY	HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
2	906	0.39	0.26	0.16	0.10	0.37	1.51
2	1154	0.38	0.23	0.15	0.10	0.36	1.20
8	1506	0.25	0.13	0.08	0.05	0.28	1.54
8	859	0.23	0.13	0.08	0.08	0.30	1.11
15	906	0.27	0.07	0.04	0.04	0.37	1.43
15	1201	0.21	0.10	0.05	0.05	0.37	1.15
15	1455	0.18	0.09	0.05	0.06	0.40	1.45
19	1857	0.23	0.20	0.17	0.10	0.30	1.43
22	1205	0.23	0.15	0.09	0.07	0.41	1.44
22	859	0.24	0.18	0.09	0.06	0.45	1.44
23	1201	0.20	0.11	0.05	0.06	0.47	1.42
25	1858	0.33	0.27	0.17	0.11	0.28	1.42
25	1201	0.33	0.19	0.12	0.05	0.30	1.13
26	1857	0.19	0.09	0.04	0.04	0.17	1.43
26	1205	0.26	0.14	0.07	0.05	0.17	1.13
26	1457	0.25	0.15	0.08	0.05	0.17	1.41
AVERAGE		0.26	0.15	0.09	0.07	0.33	1.34
0900 AVER		0.26	0.15	0.09	0.07	0.33	1.45
1200 AVER		0.28	0.15	0.09	0.07	0.35	1.15
1500 AVER		0.25	0.14	0.09	0.07	0.29	1.46

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)									
SITE ELEV (M)=		YEAR =		MONTH=		LATITUDE=		49.0	
DAY	HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS		
3	1204	0.24	0.11	0.06	0.06	0.56	1.15		
3	1255	0.27	0.12	0.07	0.07	0.65	1.15		
3	1301	0.20	0.09	0.05	0.05	0.46	1.14		
10	1308	0.23	0.11	0.06	0.06	0.53	1.14		
10	1358	0.20	0.10	0.05	0.05	0.48	1.14		
11	1308	0.19	0.09	0.05	0.05	0.47	1.14		
11	1358	0.21	0.10	0.06	0.06	0.53	1.14		
13	1308	0.20	0.09	0.05	0.05	0.47	1.14		
13	1358	0.21	0.10	0.06	0.06	0.53	1.14		
14	1308	0.19	0.08	0.05	0.05	0.47	1.14		
14	1358	0.21	0.10	0.06	0.06	0.53	1.14		
16	1308	0.17	0.07	0.04	0.04	0.40	1.14		
16	1358	0.20	0.09	0.05	0.05	0.47	1.14		
19	1308	0.23	0.11	0.06	0.06	0.53	1.14		
22	1308	0.25	0.12	0.07	0.07	0.58	1.14		
22	1358	0.24	0.11	0.06	0.06	0.53	1.14		
24	1308	0.25	0.12	0.07	0.07	0.58	1.14		
24	1358	0.24	0.11	0.06	0.06	0.53	1.14		
26	1308	0.20	0.09	0.05	0.05	0.47	1.14		
26	1358	0.23	0.11	0.06	0.06	0.53	1.14		
27	1308	0.17	0.07	0.04	0.04	0.40	1.14		
31	1358	0.23	0.11	0.06	0.06	0.53	1.14		
31	1459	0.21	0.10	0.06	0.06	0.46	1.34		
AVERAGE		0.21	0.10	0.06	0.06	0.46	1.34		
0900 AVER		0.19	0.09	0.05	0.05	0.42	1.46		
1200 AVER		0.23	0.10	0.06	0.06	0.47	1.13		
1500 AVER		0.22	0.11	0.07	0.07	0.52	1.39		

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)									
SITE ELEV (M)=		YEAR =		MONTH=		LATITUDE=		49.0	
DAY	HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS		
2	1812	0.14	0.05	0.03	0.03	0.16	1.54		
2	1852	0.15	0.06	0.03	0.03	0.23	1.47		
2	1903	0.15	0.06	0.03	0.03	0.24	1.47		
3	1200	0.15	0.06	0.03	0.03	0.24	1.47		
3	1259	0.13	0.05	0.02	0.02	0.25	1.46		
4	1408	0.13	0.05	0.02	0.02	0.25	1.46		
4	1458	0.15	0.06	0.03	0.03	0.25	1.46		
4	1508	0.15	0.06	0.03	0.03	0.25	1.46		
7	1258	0.16	0.07	0.03	0.03	0.25	1.46		
7	1358	0.16	0.07	0.03	0.03	0.25	1.46		
8	1458	0.17	0.08	0.04	0.04	0.25	1.46		
8	1558	0.17	0.08	0.04	0.04	0.25	1.46		
9	1458	0.17	0.08	0.04	0.04	0.25	1.46		
9	1558	0.18	0.09	0.05	0.05	0.25	1.46		
10	1458	0.18	0.09	0.05	0.05	0.25	1.46		
11	1458	0.19	0.10	0.06	0.06	0.25	1.46		
11	1558	0.19	0.10	0.06	0.06	0.25	1.46		
17	1202	0.17	0.08	0.04	0.04	0.25	1.46		
17	1302	0.17	0.08	0.04	0.04	0.25	1.46		
18	1501	0.15	0.06	0.03	0.03	0.25	1.46		
22	1333	0.14	0.05	0.03	0.03	0.25	1.46		
22	1356	0.15	0.06	0.03	0.03	0.25	1.46		
23	1203	0.17	0.08	0.04	0.04	0.25	1.46		
23	1256	0.18	0.09	0.05	0.05	0.25	1.46		
23	1358	0.18	0.09	0.05	0.05	0.25	1.46		
24	1458	0.16	0.07	0.04	0.04	0.25	1.46		
25	1358	0.16	0.07	0.04	0.04	0.25	1.46		
25	1458	0.16	0.07	0.04	0.04	0.25	1.46		
29	1502	0.20	0.11	0.06	0.06	0.25	1.46		
30	1200	0.22	0.11	0.06	0.06	0.25	1.46		
30	1200	0.22	0.11	0.06	0.06	0.25	1.46		
AVERAGE		0.18	0.08	0.04	0.04	0.37	1.47		
0900 AVER		0.16	0.07	0.04	0.04	0.35	1.62		
1200 AVER		0.20	0.08	0.04	0.04	0.36	1.22		
1500 AVER		0.18	0.08	0.04	0.05	0.39	1.52		

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METFCC BASE E)

SITE ELEV (M)= 723. YEAR = 1978 MONTH= 10 LATITUDE= 49.0

DAY HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
11 858	0.09	0.04	0.02	0.02	0.20	2.59
11 1200	0.14	0.08	0.05	0.02	0.20	1.80
11 1206	0.15	0.08	0.05	0.04	0.13	1.84
13 1355	0.22	0.15	0.09	0.06	0.22	2.22
20 1900	0.12	0.06	0.04	0.04	0.17	2.89
20 1159	0.17	0.11	0.07	0.05	0.20	1.57
30 1900	0.12	0.06	0.03	0.03	0.09	3.34
30 1200	0.12	0.06	0.03	0.03	0.08	2.20
AVERAGE	0.14	0.08	0.05	0.04	0.16	2.36
0900 AVER	0.11	0.06	0.04	0.03	0.15	2.94
1200 AVER	0.16	0.10	0.06	0.05	0.17	2.01
1500 AVER	0.0	0.0	0.0	0.0	0.0	0.0

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METFCD BASE E)

SITE ELEV (M)= 723. YEAR = 1978 MONTH= 9 LATITUDE= 49.0

DAY HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
1 858	0.15	0.07	0.04	0.04	0.44	1.79
1 1155	0.20	0.09	0.05	0.05	0.48	1.32
1 1904	0.37	0.19	0.06	0.10	0.42	1.77
15 1300	0.22	0.11	0.10	0.06	0.42	1.50
20 1900	0.13	0.06	0.03	0.03	0.19	2.05
20 1158	0.15	0.07	0.04	0.04	0.24	1.50
20 1457	0.14	0.07	0.04	0.05	0.42	2.11
25 1900	0.18	0.11	0.08	0.08	0.48	2.15
25 1157	0.14	0.08	0.05	0.06	0.42	1.56
27 1900	0.14	0.08	0.05	0.06	0.42	2.20
27 1200	0.23	0.12	0.07	0.11	0.36	1.58
29 1158	0.18	0.10	0.07	0.05	0.33	1.61
29 1453	0.16	0.10	0.07	0.05	0.33	2.33
AVERAGE	0.18	0.10	0.06	0.06	0.40	1.83
0900 AVER	0.19	0.09	0.05	0.06	0.45	1.96
1200 AVER	0.19	0.11	0.08	0.07	0.39	1.51
1500 AVER	0.15	0.08	0.06	0.05	0.33	2.23



POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

SITE ELEV (M)= 723. YEAR = 1978 MONTH= 11 LATITUDE= 49.0

DAY HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
15 900	0.18	0.07	0.06	0.04	0.18	4.37
20 900	0.13	0.04	0.03	0.03	0.07	4.79
20 1500	0.11	0.04	0.03	0.04	0.05	6.23
AVERAGE	0.14	0.05	0.04	0.04	0.10	5.13
0900 AVER	0.16	0.06	0.04	0.03	0.12	4.58
1200 AVER	0.0	0.0	0.0	0.0	0.0	0.0
1500 AVER	0.11	0.04	0.03	0.04	0.05	6.23

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

SITE ELEV (M)= 723. YEAR = 1978 MONTH= 12 LATITUDE= 49.0

DAY HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
1 1203	0.17	0.06	0.02	0.02	0.06	3.04
1 1906	0.10	0.02	0.04	0.02	0.03	5.53
1 1458	0.09	0.03	0.03	0.01	0.03	7.06
1 1500	0.14	0.08	0.06	0.04	0.10	7.77
15 905	0.08	0.02	0.02	0.01	0.08	6.77
20 1458	0.09	0.03	0.03	0.02	0.12	7.50
AVERAGE	0.11	0.04	0.03	0.02	0.07	6.28
0900 AVER	0.09	0.02	0.03	0.02	0.05	6.15
1200 AVER	0.17	0.06	0.02	0.02	0.06	3.04
1500 AVER	0.11	0.05	0.04	0.02	0.08	7.44

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

SITE ELEV (M)= 723. YEAR = 1979 MONTH= 1 LATITUDE= 49.0

DAY HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
12 1200	0.22	0.08	0.04	0.03	0.06	3.02
17 1203	0.13	0.07	0.06	0.03	0.13	6.50
17 1204	0.21	0.07	0.04	0.04	0.16	2.85
19 1157	0.21	0.08	0.05	0.04	0.14	2.85
AVERAGE	0.19	0.07	0.05	0.04	0.12	3.82
0900 AVER	0.13	0.07	0.06	0.05	0.13	6.50
1200 AVER	0.21	0.07	0.04	0.03	0.12	2.92
1500 AVER	0.0	0.0	0.0	0.0	0.0	0.0

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

SITE ELEV (M)= 723. YEAR = 1979 MONTH= 2 LATITUDE= 49.0

DAY HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
2 905	0.19	0.11	0.08	0.04	0.08	4.85
23 1200	0.39	0.18	0.12	0.05	0.10	1.95
AVERAGE	0.29	0.15	0.10	0.07	0.09	3.40
0900 AVER	0.19	0.11	0.08	0.04	0.08	4.85
1200 AVER	0.39	0.18	0.12	0.05	0.10	1.95
1500 AVER	0.0	0.0	0.0	0.0	0.0	0.0

POPLAR RIVER ATMOSPHERIC TURBIDITY DATA (VOLZ METHOD BASE E)

SITE ELEV (M)= 723. YEAR = 1979 MCNTH= 3 LATITUDE= 49.0

DAY HOUR	TURBIDITY 440 NM	TURBIDITY 500 NM	TURBIDITY 640 NM	TURBIDITY 880 NM	TURBIDITY 940 NM	RELATIVE AIR MASS
5 1500	0.22	0.07	0.04	0.03	0.22	2.47
14 1904	0.29	0.12	0.08	0.07	0.19	2.42
14 1204	0.36	0.14	0.08	0.07	0.17	1.82
14 1458	0.28	0.11	0.09	0.06	0.18	2.21
19 1902	0.32	0.14	0.07	0.05	0.14	2.16
28 1200	0.42	0.17	0.08	0.06	0.12	1.45
AVERAGE	0.31	0.12	0.07	0.06	0.17	2.06
0900 AVER	0.30	0.13	0.08	0.06	0.16	2.29
1200 AVER	0.39	0.16	0.08	0.07	0.15	1.53
1500 AVER	0.25	0.09	0.05	0.04	0.20	2.34







